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For further details see page 1030.



THE JOURNAL OF THE ROYAL UNITED SERVICE INSTITUTION.

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THE IMPORTANCE OF SEA POWER IN THE GROWTH OF THE ROMAN EMPIRE, AND THE LESSONS TAUGHT TO GREAT BRITAIN.

By Mr. WILLIAM W. MARSHALL, B.C.L., M.A., F.R.S.L.

Friday, 26th May, 1899.

J. K. LAUGHTON, Esq., R.N., Professor of Modern History, King's College, London, in the Chair.

THE influence of Sea Power upon the history of humanity forms a subject which needs no apology at the present time, and especially before the audience which I have now the honour to address.

The heart of Great Britain has at length been awakened to the necessities and the responsibilities of her position as the foremost nation of the world; at length she realises the importance of her First Line of Defence, the life-belt of buoyant steel guarding her mercantile marine, which is the life-blood of her being; and any light from whatsoever source shed upon the secret, humanly speaking, of her greatness is not without interest to those who are humbly proud of that greatness, and who would maintain it at the cost of their wealth, of their labour, and of their lives.

Nor are the lessons of ancient history without their peculiar value. It might perhaps be asked how we can compare the ancient war-ships, propelled by oars, with the mighty engines of offence and defence which modern science has given to our age of progress. The resemblances are many and important. It is pointed out to us by Captain Mahan, in what may be called an epoch-making work—"The Influence of Sea Power on History"—that the principles of strategy remain much the same, though tactics change with mechanical inventions. The great principle of strategy is to have the right force in the right place at the right time. It is thus that in all ages the greatest battles of mind against mind must ever be fought and the greatest victories, though sometimes bloodless, must ever be won. Moreover, even as regards tactics, the modern war-ship resembles those of the ancient Romans much more than it resembles

the sailing vessels of a century ago in at least one most important point. In the days of sailing ships the fate of battles was borne on the wings of the wind. A head wind placed a fleet at a terrible disadvantage, while a calm rendered the finest vessel afloat little better than a helpless hulk upon the waters. But the Roman galley was as independent of the wind as the modern battle-ship, except in so far as man-power is weaker than steam-power and muscles tire more rapidly than steel. Nor was this the only point of resemblance. One terrible weapon in modern naval warfare is the ram, and this in skilful hands was the most potent weapon of the ancient battle-ship. The complicated manœuvres, by which the beaks were driven into the weakest spot of the enemy's vessels, were the secret of scientific naval warfare. The Roman war-ship, moreover, in its various forms was a formidable fighting machine. It was a vessel of considerable length in proportion to its beam, usually fitted with five banks of oars, but frequently with more. Even the smallest cruisers with a single bank had twenty-five oars a side. The stern was high out of the water, and here the helmsman steered by means of two long sweeps. The bows were protected with metal plates, and armed with one or more beaks or rams; the earlier form of ram was above the water-line, but an improved type was afterwards introduced with three or four sharp metal points fixed on a level with the keel. At the beginning of the Empire turret-ships were used, fiery missiles and heavy weights being discharged by hand or engine from a great tower on the deck. The ships had an auxiliary mainsail for use on long voyages, but the mast was lowered and all top hamper stowed before going into action. The crew of an average battle-ship must have numbered at least 250 or 300 men without counting the marines.

The various Commands of the Sea at different periods of ancient history are numerous and well defined. We might tell of Minos of Crete and his Sea Power in the thirteenth century before our era; we might tell of Agamemnon of Mycenae and the naval expedition against Troy, immortalised by Homer; and so on down the tide of history for a thousand years from the thalassocracies of Miletus, of Samos, of Corinth, of Corcyra, of Aegina, and other Powers, till we reach the story of Genseric the Vandal in the fifth century of our era when he sailed up the Tiber and pillaged Rome, sank fleet after fleet of the Romans, and ravaged year by year the greater part of the Mediterranean seaboard.

Above all we might look at the Sea Power of Athens. We might tell how at the bidding of the God, as interpreted by Themistocles, the Athenians trusted to their "wooden walls," to their hearts of oak. We might tell how by these "wooden walls" the wave of Asiatic despotism was flung back from the coasts of Greece, and of that great day, when —

"A King sate on the rocky brow
Which looks o'er sea-born Salamis,
And ships by thousands lay below,
And men in nations—all were his!
He counted them at break of day—
And when the sun set, where were they?"

We might tell how, through the wisdom of Pericles, Athens improved her opportunities and won her naval Empire; how the skilful tactics of Phormio and those who learnt his secret gave victory after victory to her arms; and how at last the loss of her Navy in the Great Harbour of Syracuse sealed once and for ever the sentence of her fall.

Why then amidst this wealth of history should Rome be chosen as the centre of thought in the story of naval supremacy in the ancient world?

It is not because the Romans give us more details than other nations of the doughty deeds of their seamen. Of the Romans it was especially true that their naval heroes were a strange race, something apart from themselves, a phenomenon which they did not understand. It is difficult for a people, who love the sea and look upon it as their friend in peace and their ally in war, to realise the feelings of the ancients. Just as the Greek philosopher, in spite of the glories of Salamis, could look upon death by drowning as a disgrace, so the Roman writers have no good word for the angry, cruel, restless, faithless sea, with its foaming, sunken reefs, and its huge, swelling, surging, threatening waste of waters. Their hatred of the sea was reflected in their estimate of their sailors, and the Navy was regarded as a less honourable branch than the sister Service. More honour then to their Navies, which helped to win, to consolidate, and to preserve their Empire.

But the reason why Rome is chosen as the test case of Ancient History is that the Empire of Rome was by far the greatest of the civilised Empires of antiquity. It had not only greatness, like the mushroom Empire of Alexander, but it had also solidity and permanence. And there is another reason. Rome was the typical military Power of the ancient world; and here it is necessary to guard against any misconception. In showing the services of the Roman Navy, nothing should be further from our thoughts than to depreciate the work of her Land Forces. Her Armies were the very breath of her life, the fundamental condition of her existence. And therefore Rome has been chosen to prove the value of Sea Power even to a nation whose strength was in her soldiers and in the genius of her generals.

The Sea Power of Rome dates from the First Punic War, the commencement of the long struggle between Rome and Carthage; and it is impossible to form a just estimate of the importance of this war without a brief study of the origin of Carthage and of the traditions of the Phoenician race. Carthage was the chief settlement of the greatest commercial and naval Power of antiquity. Phoenicia, her mother country, was in every way fitted by geographical conditions to be the cradle of the maritime enterprise of the world. A narrow strip of land, north of Palestine, between the Mediterranean and the richly timbered heights of Lebanon, it was not only the terminus of the great caravan routes from Arabia, and from India and the Far East, but it presented an extensive coast line in proportion to its size, and its valleys were divided by mountain spurs, which ran out to sea and formed shelter for the many harbours on its river mouths. The chief towns were Sidon and Tyre. "Great Zidon," was

probably the oldest city of Phoenicia ; but it was eclipsed in power by its colony Tyre, "the daughter of Sidon," which lay 20 miles further south. The Phoenicians were of Semitic origin, and closely akin in race and language to the Hebrews, the Jewish Kingdom forming the hinterland of the Tyrian territory.

The maritime enterprise of the Phoenicians was unprecedented. Not only were they the great carriers of the ancient world, but their colonies were innumerable. It would take more than the whole time at my disposal to give even a brief outline of the extent of their colonisation. We find their settlements on the Arabian Gulf and in Egypt, on the Black Sea, scattered over the whole of the Mediterranean, and out beyond the Pillars of Hercules, southward on the West Coast of Africa, and northward in Spain, in Cornwall and the Scilly Isles, and in Jutland.

But we must especially notice the great chain of colonies commanding the narrow seas off Sicily, and forming a sort of Gibraltar, which effectually shut their rivals, the Greeks, from the Western Mediterranean. Here they had naval stations or factories at Malta, Thapsus, the Lesser Leptis, Utica, Hippo, and Carthage ; across the water the Aegatian Isles, Agrigentum, Lilybaeum or Marsala, Drepanum, Eryx, Panormus or Palermo, and the Liparae Islands.

Great was the maritime enterprise of the Phoenician race ; but they made two fatal blunders, which may teach us a double lesson. In the first place, the spirit of the race was wholly commercial ; they neglected their Navy ; and hence they were conquered again and again. The Athenians hated trade ; they fell and lost their Empire. The Phoenicians fell, because they loved trade and trade alone. The Romans combined commercial enterprise with Imperial policy, and their Empire lasted century after century till the soul of the nation was dead. In the second place, the Phoenicians failed through that want of combination and power of union, which is characteristic of the Semitic races. Had Tyre and Sidon united with Carthage and their other colonies, there is little doubt that the Phoenician race might have been supreme to-day. But there was jealous rivalry between the mother cities and the daughter States, and that rivalry spelt ruin. Imperial Federation in the Phoenician Empire would have changed the history of the world.

It was when the Eternal City came into collision with Carthage, Queen of Phoenician colonies, that she first realised her need of a Navy. Her ambition was no longer limited to the narrow confines of Italy, and the one great obstacle to her schemes of colonisation and conquest was the Sea Power of Carthage. Before Rome could found an Extra-Italian Empire she must first meet the Navies of the chief maritime Power of antiquity. In 264 B.C. an opportunity offered which Rome was not slow to embrace. The port of Messana, the key to Sicily, was in the hands of some Italian pirates, known as Mamertines. The Greek town of Syracuse and Carthage, in the interests of her Sicilian commerce, determined to sweep these rovers from the seas. The pirates appealed to Rome, but so weak was Rome's Naval Power that the Carthaginian Admiral boasted that he would not suffer them so much as to wash their hands in the waters of the Straits.

The First Punic War began. With great difficulty the Roman troops were thrown across into Sicily, and the war was prosecuted with such vigour that Syracuse joined the Roman cause. But at every turn the Romans were crippled by the enemy's fleets, and a notable instance of this is seen at the siege of Agrigentum, where the Carthaginians were enabled to cut off supplies and reduced the besieging force to a condition of impending starvation.

At this crisis there appeared upon the scene a man to whom is due the proud title of Father of the Roman Navy—Duilius, a Plebeian Consul. His foresight showed him that Sea Power must be met by Sea Power, and the Roman Government realised that nothing could be effected with the few vessels of an obsolete class which formed their only claim to maritime strength. At such a low ebb was Rome's knowledge of naval affairs that Duilius had to wait till a Carthaginian vessel was wrecked on the southern coast of Italy before he could secure a model of the then modern type of war-ship. But after once obtaining his model he lost no time. In sixty days by unparalleled exertions a fleet of 120 sail was built and launched.

But Duilius not only saw the need of a fleet, but realised also the inferiority of the material with which he had to man that fleet. It was idle to expect that his hastily trained crews of Italians could cope with the Phœnician seamen in scientific tactics and manœuvres. To remedy this, heavy gangways about 36 feet long were placed erect in the bows of the battle-ships. The Romans closed with the enemy and laid their ships alongside. Then the gangways were let fall, and the spikes underneath piercing the enemy's decks lashed the vessels together. It became an affair of boarders, and the Romans could fight hand-to-hand with a bull-dog courage known only to them and to Britons.

There follows now one of the most remarkable chapters in the history of the world. The Romans were landmen pure and simple; their opponents were the finest sailors of antiquity. Through stress of weather the Romans lost fleet after fleet, but with the exception of one reverse they won every engagement at sea of any importance throughout the war. The whole story is summed up by Horace in a line—"The Sicilian Sea crimson with Carthaginian blood."

In 260 B.C., Duilius, with his new fleet, met the enemy off Mylae in the north-east of Sicily, and won a brilliant victory, sinking 14 and capturing 31 of the Phœnician vessels. So he laid the foundations of Rome's Sea Power and of her Empire. The Columna Rostrata was erected in the Forum, decked with the beaks of the captured war-ships, and we can hardly avoid a smile as we read of the simple honours paid to the first great Roman Admiral by the decree that he should be escorted home from banquets at night by a procession of flute-players and torch-bearers.

Four years after the battle of Mylae, Regulus won another great victory for Rome off Ecnomus on the south-west coast of the island, the Carthaginians losing over 100 war-ships. In this battle it is said that no less than 700 ships and 300,000 men were engaged. Regulus sailed on to Africa and landed his troops; but they were defeated and he

was captured; and it was only the superiority of the Roman fleet which enabled it after a sharp brush with the enemy to embark the remnant of the army and sail for Rome. But the Romans were now to meet with a foe mightier than they. A great gale arose, which dashed upon the Sicilian shore their first war-fleet, and strewed with the bodies of men and the wreckage of 270 ships the whole coast from Camarina to Pachynus. With indomitable perseverance within three months the Romans had a second fleet of 220 vessels ready, and with this they seized Panormus, the modern Palermo, one of the most important naval stations of the island. But in the following year this fleet too was shattered by a gale, and Rome for the moment was disheartened. She gave up the Command of the Sea, with the result that the Carthaginians made a vigorous, though unsuccessful, attempt to retake Palermo, and there followed the greatest land battle of the war.

Then the Romans again took heart, and built a third fleet of 200 battle-ships. The reply of Carthage is worthy of note. It was a proposal for peace. Peace was refused through the patriotic devotion of Regulus, and the fleet was sent to invest Lilybaeum or Marsala, the strongest of the Carthaginian fortresses. But the Roman commander lost most of his ships in an attempt to surprise the Carthaginian fleet in the neighbouring harbour of Drepanum, and the remainder of Rome's third fleet was lost on the fatal coast near Camarina with its convoy of 800 merchant-vessels carrying supplies to the troops on the western coast. Again the Romans gave up the sea, and the chance thus offered was seized by Hamilcar Barca, the father of Hannibal. He established himself in the north-west corner of Sicily, and ravaged even the Italian seaboard, while plentiful supplies were brought by sea to the beleaguered stronghold of Lilybaeum.

Once more the Romans realised that Sea Power was vital to their existence. But the treasury was empty, and it was only with funds raised by the wealthier citizens in a spirit of glorious patriotism that a fourth fleet was equipped for sea, and despatched under Catulus to blockade Drepanum. That fatal sense of security, which sometimes steals over a nation, had caused the Carthaginian Government to neglect their Naval Power; but a considerable fleet was hurriedly collected and sent to raise the blockade. It was met by the Romans off the Aegatian Islands, and 50 battle-ships of Carthage were sunk and 70 captured. This great naval victory in the spring of 241 B.C. ended the First Punic War. The terms of peace included no demand for the surrender of the Phoenician fleet. It was already practically annihilated. Rome was now Mistress of the Mediterranean, and Sicily, the granary of Central Europe, became Rome's earliest Province, the first-fruits of her Empire.

Between the First and Second Punic Wars certain minor events occurred of importance to our subject.

The Inexpiable War—a war without quarter and without mercy—broke out between Carthage and her foreign mercenaries. The great Phoenician Power, which the might of Rome herself had been able merely to cripple, was in danger of losing her very existence through the foreigners

employed in her service. And here is a warning to our own Mercantile Marine. If it is a sound and wholesome law that a British ship must be owned by British subjects, should she not be manned by British subjects? Our Mercantile Marine should be a training school for our Navy in the hour of need. Should the patriotism of our shipowners allow the finest mercantile service the world has ever seen to be a school for foreign seamen, a reserve it may be for the Navies of Britain's foes?

At the close of this Inexpiable War, Rome demanded the cession of Sardinia and Corsica. It was owing to the Sea Power of the Romans that Carthage dared not refuse, and these islands became Rome's second Province. Then in 229 B.C., the Romans sailing from Brindisi with a powerful fleet beat Teuta, the pirate queen of Illyricum, on the east of the Adriatic, an ideal haunt for rovers of the sea. The Illyrians were ordered not to appear south of Lissus with more than two vessels at a time, and Illyricum became a Roman Protectorate. Ten years later Rome crushed the successor of Teuta, Demetrius the Traitor, who intended to assist Hannibal, and they kept possession of three important strategic positions: Corcyra, Dyrrhachium, and Apollonia.

We now come to what is usually regarded as the most purely military episode in the history of this great military Power—the Second Punic War, or the Campaigns of Hannibal.

It is a matter of regret that it would be impossible in the whole of this hour to touch, in more than the most cursory manner, upon the greatest war of antiquity. It is a matter of less regret, because the subject has already been sketched with a light but masterly hand by the author of "The Influence of Sea Power on History." But there is no war in any country or in any age where the side-lights of history will teach us more useful lessons.

The story of the campaigns runs usually as follows. After the siege of Saguntum, war was declared, and in the spring of 218 B.C. Hannibal set out from Carthago Nova, in Spain, to march into Italy. He crossed the Pyrenees, the Rhone, and the Alps, probably by the Pass of the Little St. Bernard, defeated the Romans at the Ticinus and the Trebia, tributaries of the Po; crossed the Apennines, and beat Flaminius at Lake Trasimene in 217 B.C.; was baffled for a while by Fabius Maximus, the Delayer; crushed the Romans in 216 B.C., at Cannae, and might perhaps have taken Rome; lost his brother Hasdrubal, and the reinforcements from Spain in 207 B.C., at the River Metaurus; and after holding out in Italy for five more years was beaten by Scipio Africanus, on the River Bagradas, near Zama in Africa.

But the central point of interest is the "splendid isolation" of Hannibal. We are told that this was due to the jealous lethargy of the Carthaginian Government; but the side-lights of the story show that it was chiefly due to the Sea Power of Rome.

The first step in the war was that the Roman Consuls were ordered to raise such land forces as seemed desirable, and "as large a fleet as they could." Again, Livy tells us that the Romans did not think the Carthaginians would dare to invade by sea, such was the strength of

Rome's Navy, while the Carthaginians expected the Romans would prosecute the war with that branch of the Service in which they had proved successful in the previous struggle. To meet the emergency, an extraordinary tax of "ship-money" was levied upon the citizens of Rome.

Time will not permit us to go into details. But it was the Roman fleet in the Gulf of Lyons which compelled Hannibal to take the perilous route across the mountains, which carried Scipio back to Italy to meet him there, and which threw an army into the north of Spain to stop his brother Hasdrubal from bringing reinforcements. It is true that we find solitary instances of Carthaginian successes at sea. We hear, for example, of a convoy of merchantmen with supplies for the Roman forces in Spain being intercepted by the enemy; of Bomilcar landing in the south of Italy; and of Mago joining the Gauls near Genoa. But the fact that there was no great naval battle proves the acknowledged superiority of Rome at sea, and Hannibal's isolation and the cause of his failure may be seen by a glance at the seat of war.

Hannibal had three bases: Carthago Nova in Spain, Carthage in Africa, and the allied State of Macedonia.

If we draw a line from the Roman naval base in Spain at Tarragona, past the southern extremity of Sardinia, to Lilybaeum or Marsala in Sicily, and another from Syracuse on the east coast of the island to the shores of Epirus, it can be shown that the Mediterranean north of these lines was during most of the war indisputably commanded by Rome. The line of communication from Spain was broken by Tarragona and the army at the foot of the Pyrenees, the Romans even seizing Carthago Nova itself; that from Carthage by the fleets at Marsala, Palermo, and Messina; and that from Macedonia by a powerful squadron at Brindisi.

Hence resulted the isolation of Hannibal, and the ever glorious but hopeless struggle of a single man against a nation.

It has been a matter of surprise how, in face of the Roman supremacy at sea, Hannibal was able to cross over to Africa at the close of the war. In 203 B.C., Scipio then in Africa, at the request of the Carthaginian Government laid down certain terms of peace, sufficiently harsh and including the withdrawal of their armies from Italy and Gaul. The Carthaginians accepted the terms, and Livy—a far shrewder historian than is commonly supposed—gives the reason very distinctly; it was simply to gain time till Hannibal could cross into Africa. An armistice was concluded; while envoys were sent to Rome. The two brothers in Italy and Gaul, Hannibal and Mago, were recalled. The latter died on the passage, and some of his ships were captured by a Roman admiral, who had probably not yet heard of the armistice. But Scipio was bound by its terms, and—especially as Hannibal was fulfilling by his withdrawal one of the conditions of the proposed peace—he could offer no opposition to his return to Africa.

After Hannibal's final defeat at Zama, it is a significant fact that the terms of peace included the surrender of all Carthaginian war-ships except ten cruisers.

The next great Power with which Rome came into collision was Macedonia. We have seen that Philip of Macedon made an alliance with Hannibal, but owing to Rome's power at sea could do nothing to help him in Italy. He prepared a large naval force, and took Oricum and besieged Apollonia as bases for an invasion of Italian soil. But the Romans blockaded the mouth of the Aous with their fleet, and Philip was forced to burn his ships and retire from the sea. Through the whole story we see how, as Mommsen says, "the want of a war-fleet paralysed Philip in all his movements." He could take no offensive measures against Italy, and Rome could throw an army at her pleasure into Epirus. Then the Roman Senate commissioned for service in Greece a small squadron, which seized Aegina and proved sufficient to hold Philip in check. In 201 B.C. he crossed into Caria, but fleets of Roman allies blockaded him so closely that he with difficulty returned to Europe, and Roman fleets sailed again for Greece and the stronghold of Chalcis in Euboea was taken. Philip was most vulnerable in Thessaly, but there the Roman armies were strongly supported by their Navy, while the seaport of Anticyra in Phocis became also a base of operations. A Roman fleet then moved on Corinth and shook the resolution of the Achaean League, so that they withdrew from alliance with Macedon. The final battle was fought on land at Cynoscephalae in Thessaly, but that battle could never have been fought and won without the co-operation of the fleet; and the Romans showed that they realised what the sea meant to Macedon by making peace only on condition that all the Macedonian vessels were surrendered to Rome.

Next in order in 190 B.C. there follows the great Syrian War with Antiochus the Great, whose dreams of conquest reached East and West far beyond the bounds of possibility. This too was ended by a land battle, but the course of the war was shaped long before by the fleets of Rome. After Zama, Hannibal had taken refuge at the Syrian Court, and when Rome demanded that Antiochus should restore to Macedon the Thracian Chersonese, Hannibal advised him in the strongest terms to act on the offensive, and either to let him invade Italy with Carthaginian troops or to strike the blow himself. It was Rome's Navy which made him unable to follow this sound advice. Greece he did invade, but the Romans beat him and they beat his fleet, and he had to fall back on Asia Minor, while Naupactus or Lepanto—the chief naval station of his Aetolian allies—fell into the hands of the Romans. Before the decisive struggle Hannibal tried to help him by bringing up Phoenician mercenaries, but some Rhodian war-ships were told off to patrol the coast and intercept him, and the gallant islanders with a Roman squadron met the fleet of transports off Myonnesus, north of the Gulf of Ephesus, and sank or captured more than half the enemy. Not only did this engagement deprive Antiochus of his reinforcements, but its results were much more far-reaching. The Syrian king was so disheartened that he withdrew his forces from the Hellespont and left the passage open to the Roman troops. Scipio landed without opposition on the Asiatic shore, moved southwards, and defeated Antiochus near Magnesia, when the Romans lost 400 men and the Syrians

53,000. Once more, as with Macedon, when the war was ended, the terms of peace forced the Syrian monarch to give up for ever his entire fleet of war-ships.

Next we come to the last Macedonian War, which gave to Rome the final victory over the successors of Alexander the Great. In 171 B.C., war was declared against Perseus, son of Philip, and Rome's Navy enabled Crassus to throw a full consular army into Epirus. Perseus must have despaired of success at sea, when he gave orders for the destruction of his arsenal at Thessalonica, but on both sides the war was desultory for a time. At length, in 168 B.C., the Romans determined to dally no longer. Octavius took command of the fleet, and Aemilius Paulus hastily crossed from Brindisi to Corcyra. Historians give us little detail of the naval engagements in this war, but Cicero with his usual sagacity, tells us that the Romans conquered Perseus with their fleet. It is incredible that a statesman like Cicero should have made such an assertion of a time not more remote than the American War of Independence is from our own day, unless it had a very real foundation in truth. The final battle, which broke for ever the power of Macedon, was fought on the plains of Pydna, but we cannot doubt that the way for that victory was paved by the fleets of Rome. King Perseus fled, and Octavius with his fleet ever on the watch pursued him to Samothrace, and forced him to surrender. The terms of settlement forbade the Macedonians even to cut timber for ship-building.

Then came the Third Punic War, after fifty years of peace between Rome and Carthage. Commercial jealousy ran high, and Rome could not brook a great mercantile Power within three days' sail of the Tiber. Cato's dictum that "Carthage must be destroyed" became the watchword of Rome's policy. A pretext was soon found, and after the surrender of 300 noble youths as hostages, and all her arms and engines of war, Rome's ultimatum went forth that Carthage must be pulled down, and might be re-built ten miles from the sea. The Carthaginians were not slow to realise that this meant death at once to commercial prosperity, to maritime supremacy, and to imperial power. They resolved to resist to the end. The temples were turned into workshops, and the women gave their long hair for bowstrings. But their Naval Power was gone, and with it all hope of victory. Carthage had to die, but she died game and she died hard. Rome's fleets harassed her on all sides. At last the younger Scipio blockaded the port, and—to prevent blockade-running—threw a mole across the harbour mouth, ruining it then and for all time. Then the Carthaginians built a squadron of 50 vessels, cut a new exit from the harbour, and gallantly attacked the besieging fleet. But their bravery was of no avail, and Carthage fell. The city was defended street by street, house by house, and storey by storey. But fire completed the work which the sword began, and out of 700,000 souls at the commencement of the siege, only 50,000 at length surrendered to the Romans.

In the same year, 146 B.C., another great maritime Power fell before Rome's war-ships. Fair Corinth—the Paris of the ancient world, and one of its chief commercial centres—was the scene of the last stand of the

Achaean League. Metellus had marched from Macedonia, and was in sight of the city, when Mummius the Consul landed from his ships on the isthmus, and took over the command. Corinth fell, and Mummius has been held up to the ridicule of ages for contracting with the shipowners, who were to carry the priceless art treasures of the city to Rome, that if they lost them they were to replace them with others of equal value. Possibly this ridicule is ill-founded. It seems probable that, under the complicated laws of bottomry which we know existed in Greece, Mummius, on the advice of his Greek friends, merely made one of the many forms of contract for marine insurance then common in Greek commerce, and that his action shows that he valued these works of art rather than that he underrated their worth. Be that as it may, the art treasures of Corinth were carried to Rome to spread the light of Greece for all ages through countries, like our own, still wrapped in the gloom of barbaric darkness. Thus ended the Achaean League, and one more Province was added to Rome's Empire.

Next we come to a remarkable and most interesting failure through want of Sea Power, interesting because it concerned our own brothers by blood. About the beginning of the first century before our era, there were four sister tribes in the Cimbric Chersonese, corresponding roughly to Schleswig-Holstein. Two of these, the Cimbri and the Teutones, 300,000 fighting men with their families and servants, set out by land to find new homes. They swept over a Roman host at Arausio, the modern Orange, and left 120,000 of the enemy dead upon the field. But they were not only routed, but annihilated by Marius at Aquae Sextiae and near Vercellae on the Raudine Plains. The other two sister tribes, the Angli and the Saxones, some centuries later, took to the sea—and they are ourselves, the Anglo-Saxons of to-day.

The same lessons of the importance of Sea Power are repeated in the long and intricate course of the wars with Mithridates, the rival of Rome for the Empire of the East. After the massacre of 80,000 Italians in Asia Minor, it was his fleet which enabled him to seize Delos, the chief emporium of Rome in the Aegean, and which induced Athens with her great harbour of the Piraeus to join him. Sulla saw that nothing could be done while Mithridates had command of the sea, and he collected ships from Syria, Rhodes, and Egypt. The Piraeus was surrendered, and the dockyards and arsenals were burnt. In the following year the Mithridatic fleet suffered a crushing defeat off Tenedos, Rome was again mistress of the seas, the passage of the Hellespont was open to Sulla's troops, and Mithridates was glad to make terms, even though they included the surrender of his fleet of 70 battle-ships. Through the succeeding wars we can trace again and again the importance of Naval Power. At length Pompey was entrusted with a magnificent fleet of 500 sail and 120,000 men to sweep the Cilician pirates from the seas. Victorious everywhere, he was at once appointed Dictator of the East, and then at last the power of Mithridates was broken, and Rome's supremacy was established in the Eastern world.

But the conqueror of the East was soon to meet one mightier than he. Cæsar, "the foremost man in all the world," soldier, statesman, legislator, scientist, and writer, was soon to be matched in a struggle for Empire with Pompey his sometime son-in-law. We cannot doubt that Cæsar had learned well the lessons of his own and former ages, and the importance of maritime supremacy had been borne afresh upon his mind during his campaigns in Gaul. Their Sea Power had given to the Veneti of Brittany an influence far beyond their actual importance as a State, and he took early measures to meet and crush them on their own element. It was doubtless want of opportunity, not want of purpose, which made him at first in the final death struggle inferior at sea to his great rival. But if he could not have Sea Power himself, the next best thing was to neutralise the effect of the Sea Power of his antagonist.

Cæsar had crossed the Rubicon. He had defeated the Pompeians in Spain. Pompey himself was entrenched near Dyrrhachium, the Calais of Greece, while his fleet patrolled the coast from its headquarters at Corcyra. With much difficulty and danger Cæsar and then Antony succeeded in crossing the Adriatic, and in the spring of 48 B.C. drew lines of investment round Pompey. But the lines were broken, and Cæsar determined to shift the scene of conflict further East and away from the sea. We can hardly doubt that the chief motive of this strategical movement was to remove Pompey from his naval base. Cæsar himself tells us of Pompey's unwillingness to leave the sea and the neighbourhood of Dyrrhachium, where he had collected all his stores and arms, and where provisions for the troops were easily conveyed by his ships, and we learn from Cicero that Pompey's opinion was that "he who holds the sea is master of the world." After Pompey had followed him into Thessaly, Cæsar attempted to break the enemy's line of communications. Pompey decided to risk a decisive battle on the Pharsalian Plains. His forces were shattered, the greater part of the troops submitted to the clemency of Cæsar, and the defeated chief fled to Egypt. Many of his old veterans were in Pelusium, and if Pompey had arrived with a squadron of any strength he might still have become master of Egypt, and so of the world. But he had taken only a few vessels in his hurried flight, and the jealous fears of the Egyptian Government caused him to be murdered on reaching the shore.

Cæsar followed to Egypt and paid due honours to his rival's memory. He was blockaded by the Egyptians at Alexandria, and cut off from the island of Pharos and the sea. But he realised to the full the importance of restoring communication, and at last effected his purpose by a desperate struggle in which he had to swim for his life. Next year followed the pursuit of the Pompeians. Many of Pompey's ships had gone over to Cæsar, but a considerable fleet rallied at Corcyra and crossed to Cyrene in Africa. Cæsar sailed from Lilybaeum in Sicily, landed with his troops, and in the early spring of 46 B.C. won the battle of Thapsus. The remnant of the Pompeians sailed to Spain. Cæsar was apparently now too strong for them to risk a naval engagement, and the decisive struggle took place on land at Munda, where the Pompeians were utterly routed.

Nor was this the end of the story. Pompey's younger son, who had escaped from Munda, realised the value of Sea Power, and turned it to great though ill account. By a strange irony of fate, the son of the very man who had swept the rovers from the Mediterranean collected a great fleet of piratical craft, and became master of the seas. He seized Sicily, and stopped the corn-ships coming from Egypt and the Eastern Provinces. A famine ensued at Rome, and he forced the Government to come to terms. Sicily, Sardinia, and Corsica were given to him; but he again gave trouble, and it was not till all the dockyards of Rome had been strained to the utmost, till the great Admiral Agrippa had made the Julian Harbour, and till even slaves were set free to man the thwarts of the battle-ships, that Sextus Pompey was defeated and crushed off Naulochus on the Sicilian coast.

And now we come to an instance where a cause was lost largely through not using the advantage given by a superior naval force. The pilot of the Ship of State was gone, when she most needed his strong hand at the helm. Cæsar was dead, butchered by men whom he had pardoned and loaded with honours; and this blundering crime was destined to redden with blood the lands and waters of the world for half another generation. In 42 B.C. the Republican forces under Brutus and Cassius, the conspirators, had crossed from Asia Minor into Macedonia. They were met near Philippi by the army of the Cæsarians. For their supplies both sides were dependent on the sea. The Republican fleet was powerful enough to cut off reinforcements and supplies from their opponents, and the Cæsarians were reduced to desperate straits. They were practically blockaded, and a few days' delay might have resulted in a bloodless victory for the Republicans. But the troops of the latter were ill-disciplined and would not wait till time and hunger did their work. Two battles were fought at Philippi, and both were lost, and with Cassius and Brutus died the last hope of Republican Rome.

Eleven years had passed, and there came one of the decisive battles of the world, a sea fight, the battle of Actium :—

“Through cloudless skies, in silvery sheen,
Full beams the moon on Actium's coast;
And on those waves, for Egypt's Queen,
The ancient world was won and lost.”

The Republic was already dead, but the issue was not only whether Octavian or Antony and Cleopatra were to win the Empire, but whether West or East was to be supreme in the world. Centuries before the question had been decided at Salamis; centuries later it was to be settled at Lepanto; now the issue was tried at Actium; and some day perhaps the question will be re-opened, and the same Grecian waters will again be crimson with the blood of East and West.

War was declared against Cleopatra and virtually against Antony. The latter collected his ships and sailed to Corcyra, intending to act on the offensive. But Octavian was on the alert, his fleet patrolled the coast of Epirus, and Antony withdrew to Patrae on the Gulf of Corinth.

Agrippa, Octavian's admiral, stationed a flying squadron at Methone in Messenia to break the enemy's line of communications, and seized Corcyra while Antony's fleet was moored inside the Ambracian Gulf, supported by his army on the Actian promontory. Octavian crossed the Adriatic, and established his land forces on the north of the gulf, and Antony—under the influence, it is said, of Cleopatra—determined to abandon his army and sail for Egypt.

The great sea-fight ensued, and we may note certain resemblances between this historic struggle and the defeat of the Spanish Armada. In both the elements played a large part in the contest. In both the conquered were borne in vessels which towered above their pigmy assailants. In both the victors sailed in light, almost piratical craft, well fitted for skilful manœuvring against their unwieldy foes. Antony and Cleopatra fled, and before nightfall the Eastern fleet with its vast treasure was sunk, burnt, or captured. Octavian pursued the fugitives at his leisure, but it was only when Antony learned that the Egyptian squadron had joined the conqueror that his heart and his hope failed him:—

“All is lost;

This foul Egyptian hath betrayed me;

My fleet have yielded to the foe.”

Antony and Cleopatra met their fate, and Octavian became sole master of the Roman world.

From the ruins of the Republic arose the Imperial Dynasty, and the Emperors took measures to preserve by their Navies what the Navies of former times had helped to win; and it is interesting to note what the Romans considered the chief naval stations of strategic importance in the ancient world. The three Mediterranean squadrons were stationed at Ravenna on the Adriatic, at Misenum near the Bay of Naples, and at Forum Julium or Fréjus in Gaul; while detachments guarded the entrances to the great waterways of the Rhine, the Danube, the Euphrates, and the Nile.

How far the Romans as a nation realised what they owed to their Sea Power, we have few *data* to show. But it is a significant fact that the Rostra or platform, from which the orators addressed the people and fanned the flame of patriotism in the nation's heart, was decorated—as its name implies—not with the trophies of military victories or the spoils of vanquished armies, but simply and solely with the beaks of war-ships wrested from her early enemies by the might of Rome. Those grim and silent witnesses, towering above the crowd, proclaimed more eloquently than the tongue of man the one great fact that on the sea Rome's Empire must be won and on the sea that Empire must be maintained.

Nor was the voice of man wanting to confirm their testimony, for Cicero himself, at a time when Rome had for the moment lost command of the sea, bore witness to the same great truth:—“Rome has lost,” said he, “much, nay most, of her commercial prosperity, of her honour, and of her Imperial power; we could once not only protect our own country, but give security to all our allies in the most distant shores by the magic

of our name; but now we are cut off not only from our colonies, from our own seaboard, and from our very harbours, but even from the main highway of Italy; and yet our magistrates are not ashamed to mount this platform, bequeathed by your ancestors, adorned with naval trophies and the spoils of hostile fleets." These were words worthy of one of the shrewdest statesmen of that or any age, and they found a distant but fitting echo in those of our own Sir Walter Raleigh:—"He who commands the sea controls trade and commerce; he who controls trade and commerce commands the wealth and riches of the world; and he who controls wealth controls the world."

In conclusion, we might notice a remarkable coincidence and parallel between the history of Rome and that of our own country.

In five centuries, from the foundation of the city to the First Punic War, Rome without Sea Power had not gained a single possession outside Italy, and not even the northern portion of the country now bearing that name.

In three centuries, from that war and from the rise of her Navy, she gained practically the whole of the then known world.

In five centuries, from the Norman Conquest to the Defeat of the Spanish Armada, we gained no external possession beyond a few settlements, more or less precarious, on the East Coast of North America.

In three centuries, with our Sea Power—though we once neglected it, and lost, and deservedly lost, our American Colonies—we have gained, largely during the reign of Her present Gracious Majesty, what we see to-day on the map of the British Empire. The British possessions are usually coloured Royal Red. It would perhaps be more fitting if they were coloured Royal Blue. Then they would include our chief possession, the waters of the world, the true "Greatest Britain," so long as we retain our supremacy at sea.

Such are a few of the lessons to be learnt from a brief study of the importance of Sea Power in the growth of the Roman Empire. And there are no peoples who have more cause or more right than ourselves to lay these lessons to heart. We have every condition of success for a great naval and maritime Power, both in geographical conditions and in the magnitude and character of our population. We have, moreover, under the most constitutional Monarch that ever sat upon a throne, a Government of Freedom—free from the tyranny of a Despotism, and free from the greater tyranny of Liberty, Equality, and Fraternity—a constitution—

"Where Freedom broadens slowly down
From precedent to precedent,"

where the life of the people and the thought of the people are as free as the air which they breathe or the wave which they rule.

All this is a heritage, a great heritage, such as before has been bequeathed to none, and it is ours to hand down to posterity, that they too may enjoy and may guard the glories of our Sea Power and of our Empire, till—

"The war-drums throb no longer and the battle-flags are furled
In the Parliament of Man, the Federation of the World."

Vice-Admiral P. H. COLOMB:—I came up from a distance to hear this paper read as a matter of duty. I am going back with the consciousness that my sense of duty has been thoroughly rewarded, because I have enjoyed the paper I have heard as much as any that I have listened to in this theatre. I think it is not only that the paper shows us very deeply the nature of cause and effect, but it has evidently been very carefully prepared, and I am quite sure we all feel that it has been most admirably delivered. It is not always that the lecturer can put his pointer exactly on the spot where he means to put it while he is in the course of reading the paper that is before him, but it is a great matter, following a closely reasoned paper of this kind, to be able to have your eye directed exactly to the point where it ought to be directed at that particular moment. I think, after all is said and done, that it is an excellent sign of the times that we should have a paper of this kind read in the theatre, because if you look back to our great ancestors who first recognised the importance of the Navy, you find they were always going back to classic times for illustrations of what ought to be done in their own times; and I am bound to think that the lecturer shows us that the illustrations are as pertinent now as ever they were, and that we cannot do very wrong in studying them and carrying them out as time goes on. The man who has done most for our Navy in our own time, Captain Mahan, was the first to take up this particular line, and I think the lecturer does justice to him in drawing attention to that fact. One has always understood that the Romans and the Greeks exceedingly despised their seamen, but I suspect one of the chief reasons was because the wharves and the docks, and the repairing places for the ships, were just as grubby in the old times as they are now, and I am quite sure that if we were to draw our inspiration of what our Navy and our commerce is from our docks, and the longshore places, we should despise them just as much. Happily we do not; we go a little further. Although the lecturer is very wise in pointing out that it is easy to make a mistake in the matter of your policies, ancient history shows that if you go for commerce alone you may make yourselves very comfortable and very rich, only to have a terrible collapse at the end; whereas, on the other side, if you go entirely for militarism, so to call it, you will equally come to grief, because, although you will get your power, you will not be able to sustain it. But it is the combination which I think we have got at the present time in this country, the combination between commerce on the one side and the military power to sustain the commerce on the other side, that is the right policy to adopt. And then too, we are told, and told very clearly and plainly, how the opponents of Rome failed for want of combination—how it was that the sea Powers did not help one another when they ought to have done so; and if there is anything in the present feeling, if there is real truth in the drawing together of the United States, now growing into a great sea Power, and the British Empire, we can hope that there will be such an alliance between us as will preserve the sea between us and keep the peace of the world. There is a great deal to be said for this paper. It is full of points from beginning to end, but I should long exceed my limit of time if I were to attempt to go into them. I was struck with the fact—I did not know it before—of how Rome gained her first provinces over sea. I had been always accustomed to think it was rather the other way. When you come to look at the campaign of Hannibal, which Captain Mahan has touched upon, and you begin to see, looking at those black lines on the map, and looking at the place where Hannibal landed, driven there because it was a short sea voyage—with that terrific long line of communications behind him—you can only say:—"Why, what the devil made him go there! Surely to goodness if he was going to conquer the Roman States, there was only one way to go about it, and that was the straight way from Carthage to the Tiber?" But unfortunately there was such a thing in the way as the Roman Fleet, which drove him into Spain and enabled the Romans afterwards to cut his communications in Spain and reduce him to the position of a flying column, which we all know has ultimately to disappear in some way or other. We must recollect in all these questions that we

are not dealing with naval war here. Naval war is of a different character. This was military war carried across the water in certain cases, and the Romans were wise enough to understand that if they did not keep the road clear they could not get along it. But their power and the immense advantages they gained were brought about by their perfect understanding of that very simple point, which was a point which the Carthaginians seemed to have altogether lost sight of; it was no good their preparing a great army, unless the roads for the movement of that army were kept perfectly clear. It was very pretty, I think, the way the lecturer drew our attention to the delivery of the orations from the rostrum in Rome, and how that great military nation did not adorn that rostrum with military trophies, but with the beaks of the ships that they captured from their enemy. But the lecturer has also shown us how readily opinion changes. We do not know how, and we do not know why—how one nation with everything apparently plain before it, takes the wrong line, develops the wrong force, and comes to grief over it. So that we have Cicero talking of the rostrum and its meaning, almost exactly in the same way as Pepys talked so many centuries later in saying:—"And we are now fortifying ourselves and yet we are not ashamed."

Vice-Admiral Sir NATHANIEL BOWDEN-SMITH, K.C.B.:—The lecture which we have just heard hardly admits of any discussion, although it will be a great addition to our JOURNAL. It is an interesting historical sketch of the effect of sea power, and the lecturer has, I think, done justice to his subject. He gave us an amusing anecdote as to how one of the first Roman admirals who gained a victory was rewarded by being escorted home after his banquets by lute-players and torch-bearers. I think we ought to be glad that this gallant old warrior had not to be carried home on a shutter, after some of those libations he probably took part in. As the lecturer points out, before the first Punic War Rome was not powerful at sea, although the Mediterranean was for the ancient world the great highway of commerce. The supremacy of Carthage at sea was absolute at that period, her transports and war galleys were seen at many Mediterranean ports, and had she maintained her naval supremacy Hannibal need not have lost more than half his army by crossing the Alps. Rome, however, was already creating a Navy and realising the importance of sea power. She eventually conquered her great rival on her own element. This has been all so well told by the lecturer and has been so fully dealt with by that prince of naval writers, Captain Mahan, that I am not going to take up your time by speaking on that part of the question. If on the other hand, when the great question of the effect of sea power is before us, I speak about one comparatively small detail, I hope it will not be thought too trivial to be of interest. When Carthage enjoyed supremacy at sea we read that she had amongst her fleet hundreds of triremes and also vessels with five banks of oars; now the lecturer tells us that Rome went one better than that, and had not only five-bank galleys, but war galleys with six banks of oars. It has often been a puzzle to me how they could work these oars. If you consider a trireme, which means a vessel with three banks of oars one above the other, it is difficult to understand how the oars were worked, but when it comes to five banks it seems impossible. The upper bank of oars would be so long and heavy as to be almost unmanageable, whilst the lower tier of oars would be so close to the water that I cannot understand how they could be used except in a dead calm. Can the lecturer tell us if there are any authentic drawings or models of these vessels? I have not been able to find any. I know they are alluded to by historians and poets, but only in a cursory way. Naturally, the writers of those days would not go into technical details as to how these banks of oars were managed, but it would be very interesting to us sailors if we could know something about them. They are represented in sculpture, but are too grotesque to be reliable, besides being out of proportion. I do not mean to imply that they never existed. When we consider the wonders of Egypt, and remember how those ancient people transported those huge obelisks to Alexandria from their quarries hundreds of

miles distant, we can believe almost anything. A thousand years hence people will wonder how we managed to get about the world in two and three-deckers propelled, up to a recent date, by sails only; but they will only have to come to our museums, or to visit Greenwich, or South Kensington, and see for themselves models of the vessels which were actually used. I had the pleasure in 1854 and 1855 of serving in a three-decker with my excellent friend the Chairman. I think I can say also she was the first steam three-decker fitted with a screw and engines. I allude to the "Royal George," which was fitted with engines of only 400-H.P., and consequently could make little or no progress against a head wind. I have only now to thank the lecturer on behalf of the Institution for his interesting paper. We are very much obliged to him, and also to Professor Laughton for presiding.

Major J. W. H. MARSHALL-WEST (4th Bn. Somersetshire Light Infantry):—I hesitate somewhat to rise in this theatre after the distinguished naval officers who have preceded me, but I would like as a soldier to thank the lecturer for the most thoughtful and searching paper which he has read to us, and I say "thoughtful" in the sense of provoking thought. There is almost a fault in it, however, and that is that there is so much contained in it for one short hour, that it needs to be taken away and thought over. I wish to thank the lecturer, then, as a soldier, for giving us so much to think about as to the value of sea power. I have heard the word "military" used this afternoon in its restricted sense, but I venture to suggest that "military" does really include both the sea forces and the land forces. I think one of the chief points shown in this paper is, as Admiral Colomb so clearly told us, the importance of keeping the road, that is, the sea open, for the passage of armies by means of the fleet. To this country of ours the fleet is our first line, and this scarcely requires now to be emphasised. The nation as a whole is beginning to realise that fact, and appreciates what the fleet means to us; but I think in these days it is sometimes a little forgotten how important is the other military branch, and that we still want soldiers to go to the other end of the street, and to be able to land when and where required. There is only one way of fighting, and that is by offensive action, even in the case of self-defence, and for the sake of right and justice. It is offensive action which wins the battle, and which wins the campaign in the end, and therefore we must have an Army fit to go anywhere. Let it be small by all means. We do not want vast numbers, but we do want a little ready force to move about the world. This struck me particularly even in the Civil War that we heard alluded to between Pompey and Caesar. When one looks at the Mediterranean and remembers that that merely civil contest between two parties in Rome was fought all over the shores of the Mediterranean it brings home the importance of keeping our land forces as well as our sea forces in proper trim. One other point struck me in listening to the summary of the Punic Wars, which I think may be of interest. When the Mamertines first appealed to Rome for assistance as against the Carthaginians, Rome had no fleet whatever, it is true, and therefore found a difficulty in getting troops across to Messina on the other side of the straits; but there was another reason why the Roman Senate hesitated to assist these Mamertines, and indeed refused their request. The affair was by no means creditable to the latter. Being kindly received by the people of Messina, they rose in the night, slaughtered all the male inhabitants, married their widows, and settled down as rulers of the town. The Roman garrison of a Greek town on the other side of the straits, Rhegium, if I remember rightly, thought this was a very excellent precedent, and proceeded to imitate the Mamertines by similarly dealing with the town and inhabitants of Rhegium. The Romans in consequence sent a force to suppress these Rhegium soldiers. It would, therefore, have been highly inconsistent on their part to send a force to assist the Mamertines; but although the Senate refused this assistance, the people of Rome—with whom lay the power

to decide on peace or war—evidently began to value the importance of extra-Italian possessions, as the lecturer called them, and they seized on this pretext for war, evidently for the sake of trying conclusions with the Carthaginians, and if possible, obtaining possession of Sicily. When it came to manning the fleet, Duilius had to get men pretty well straight from the plough, and trained them to row these triremes, or whatever ships they were, seated on banks by the side of the sea, whilst the ships were being built. I was also most interested to hear the question as to these banks of oars, because the same difficulty occurred to me. I had the curiosity to make out a rough drawing to see what the length of these oars would be likely to be; and I fail to see, according to my calculations, how any mortal man, such as we know nowadays, could possibly row in the fifth row, let alone the sixth or seventh row. I hope, therefore, to hear from the lecturer whether he can give us any reliable information on the subject.

The CHAIRMAN (Professor J. K. Laughton):—It remains for me, gentlemen, to ask you to pass a vote of thanks to the lecturer. Before doing so, I should like to add my little quota to the discussion, perhaps in the way of a question. I think, too, I can answer the question put by Sir Nathaniel Bowden-Smith, and referred to by Major Marshall-West, as to the oars of the ancients. I can say positively that there are no trustworthy models of the galleys of ancient times, and certainly no pictures. There are, indeed, the grotesque sculptures on Trojan's Column, of which I fancy Sir Nathaniel Bowden-Smith was thinking. I should say they have less resemblance to the war galleys than even the pictures in the Bayeux tapestry have to sea-going ships. But how the different banks of oars were arranged is, and for the last 1200 years has been, an insoluble problem. We must remember that this problem is not how the oars could be arranged, but how they actually were arranged, and for that there is no satisfactory evidence. Major Marshall-West puts it that the length of the oars in the fifth bank would be excessive; but how would it be for those of the tenth bank? and ships of ten banks of oars were not uncommon in the Syrian war; they were perhaps equivalent to the three-deckers of a hundred years ago. But more than this, it is on record that a ship of forty banks of oars was built. I don't know that she ever got to sea, but if the oars of the fifth bank were too long for human arms what would be the oars of the fortieth bank? It is beyond conception. In mediæval times, when galleys were still the typical ships of war in the Mediterranean, they were propelled by oars, two or, in later centuries, three on a bench; and these galleys were written of as biremes and triremes. As men got more ambitious and put four, five, six and seven oars to a bench they found, after a little experience, that whilst three men on a bench could pull three separate oars with advantage, when they got beyond three it was more economical of labour to have one large oar, a sweep in fact, and so they adopted large oars pulled by four, five, six, or seven men. These came into use about the year 1400, and from that time onwards galleys had large oars. Writing about the year 1600, Pantero Pantera says he had heard that their ancestors had galleys where each man pulled a separate oar, but for himself he could not understand how it was possible. He had the same difficulty about oars that had gone out of use only about 150 years before his time, that we have now about the oars of ancient times. Fortunately, models of the mediæval galleys have been preserved at Venice. Some of these were exhibited a few years ago in the Italian Exhibition at South Kensington. They had previously been very carefully described by Sir Henry Yule in the introduction to his "Marco Polo." There is one point about the Carthaginians that has often occurred to me, which I will mention. The Carthaginians were unquestionably experienced sailors, but it seems to me that they had little or no knowledge of naval tactics; they made some very remarkable voyages, but they had not, and could not have had any experience in naval war. No doubt they had pirates to control, but this did not call for any knowledge of fleet manœuvres. That seems the natural suggestion, from the circumstances, but the proof of it is that they were utterly unable to out-

manceuvre the Romans, who were admittedly very ignorant. On every occasion they allowed the Romans with their swinging brows or gang-boards to make easy victims of them. I have sometimes wondered what the old Athenians, with their skilled tacticians—Phormio, for instance—would have done against such things. I fancy they would have rowed round them and sunk them—galley and brow together—without much difficulty. I may mention that gang-boards of a similar kind were fitted on board the Russian ships by Peter the Great, and that still later they were fitted on board the ships of the French fleet, which fought the indecisive action with Mathews off Toulon, in 1744. In neither case, however, were they of any use. Many of you will of course know that in the wars of Queen Anne's time, the favourite French tactics were to lay the English ships aboard when they could, and overpower them by the great crowd of men they could throw on board. M. de Court had no doubt the same idea in 1744, but in his skirmish—it was little more—that took place, he had no opportunity of using them. There is one other point—this is a question which I should like to ask. After the battle of Ecnomus, fought off the modern Cape Bianco, in Sicily—perhaps in point of numbers the greatest battle that has ever been fought at sea—the defeated Carthaginians drew back and took up a position off Carthage. The Romans then sent over an army of invasion. They learned that the Carthaginians were lying in force off Carthage, and so did not go there but landed at the east of Cape Bon, in the bay then called Clupea and now Kalibia. The Carthaginian fleet, still very formidable in point of numbers, was not more than 10 or 12 miles distant. Apparently it was a fleet in being. Why did it not hinder the invasion? It was certainly numerically strong enough to do so. The only explanation that occurs to me was that they were so thoroughly cowed by the defeat they had received off Cape Bianco that they were not effectively "a fleet in being"; but possibly the point has occurred to the lecturer, and he may be able to explain it more in detail. There is one thing which I must protest against, as being in a measure personally interested in it. On the last page the lecturer compares the battle of Actium with the defeat of the Spanish Armada. He says the elements played a large part in the contest. That I beg most explicitly to deny. The elements had no part whatever in the defeat of the Spaniards. Then he speaks of the Spanish vessels towering above their pigmy assailants, and the victors sailing in light, almost piratical craft. I think I have shown in various places that the victors did not sail in light piratical craft, but that the ships of the English "Navy Royal," which were the principal instruments in that great victory were, practically speaking, as large as the Spanish ships, and were much more heavily armed. However, that is a point almost foreign to the subject of the lecture, and I do not now insist upon it. I will conclude by asking you to return a very hearty vote of thanks to the lecturer for the most interesting discourse which he has given us.

Mr. MARSHALL, in reply, said:—I should like just to make a few remarks on the questions which have been put; and in the first place I am rather glad that the only serious objection, as I regard it, has been the last which is an objection to what I may call an illustration from a large subject, about which I candidly admit I know nothing at all, and not an objection to anything concerning the subject of the lecture itself. With regard to the landing of the Romans in Africa, I think Professor Laughton has hit exactly the right reason. The fact was that this army of invasion was on board the fleet which beat the Carthaginians off Ecnomus, and which went straight on to the African coast; and the probability is that the Carthaginian fleet had not had time to recover itself sufficiently to make any successful resistance or any resistance at all. In regard to the comparison between the Romans as being landsmen and the Carthaginians as being expert sailors, I entirely agree with what Professor Laughton says; and when I spoke of the skilful manœuvres of the Carthaginians, I am afraid that my meaning was not very clear. What I meant was practical manœuvres—that is, such manœuvres in the management of their ships as able merchant sailors would be acquainted with

rather than naval manœuvres. Now we come to another question, and upon that point I am extremely obliged to Professor Laughton for answering it for me, or rather for admitting that there is no answer. If I, as an old oar myself, whose favourite form of athletics at Oxford and elsewhere was rowing, had been able to discover by any means how even five banks of oars were worked, I should have considered it from my point of view the most interesting part of the whole lecture. I have been utterly unable to discover it, but from the references in numerous histories, and also from references in such out-of-the-way places as the Comedies of Aristophanes, I cannot but believe that at least five banks of oars were worked in some way or other; and I read, as Professor Laughton says, of forty banks of oars. When I come to that—I do not believe it. Nothing remains for me to do but to thank you all very much, both those who have spoken for their kind expressions, and all the audience for the very great assistance which they have given me, in going through a large amount of matter in a short time, by their kind attention.

THE YANKEE SOLDIER.

By Mr. POULTNEY BIGELOW.

Monday, June 12th, 1899.

Major-General J. F. MAURICE, C.B., R.A., Commanding Woolwich District, in the Chair.

THE first Yankee soldier came to America in 1620 and landed on the shores of New England in the neighbourhood of what is now Boston. His ship was the "Mayflower," and although the tonnage of this famous craft was about equal to that of an average East Coast fisherman, it must have contained accommodation for several thousand passengers, because nowadays every self-respecting Yankee assures you that his ancestors came over in the "Mayflower." To be sure most Englishmen that I meet came over with William the Conqueror, but then we know that this most original of Williams had more than one ship. However, this is no place for political discussions.

Every passenger on the "Mayflower" carried a Bible in one hand and a gun in the other. They left England because they were persecuted, and when they landed in America they not only proceeded to worship God in their own manner, but took pains to discourage the natives from worshipping God in any other manner. The Bible and the rifle have gone hand in hand from 1620 to the close of the nineteenth century, for the Englishman in America has been true to his traditions—he has been preaching and fighting ever since.

The Yankee soldier commenced his career by struggling for existence against the native Red-skins, and the history of New England from 1620 on is an almost unbroken record of the white man clearing the wilderness of wild beasts and still more of savage men. The Army and the Navy of Oliver Cromwell were recruited from amongst the brothers and cousins of those who did the first English fighting on American soil, and if we judge by the odds against which the white man fought on the shores of Massachusetts Bay and note the results he achieved, their kinsmen of Norfolk and Suffolk have no reason to be ashamed of their first efforts in the way of a Greater Britain.

So soon as the New England Puritans were allowed an opportunity of building comfortable houses and trading with the outside world, they discovered that the Dutch language and a Governor from Holland ruled New York and the Valley of the Hudson River. Before the end of the seventeenth century there came a conflict in which the Dutch language and the Governor from Holland disappeared, and the English rifle crossed over into the State of New York and pushed forward towards the Great Lakes and the Mississippi River.

But soon the English language encountered another and more serious check, for the Frenchmen had established military posts and religious mission stations, not only up the St. Lawrence and along the Great Lakes, but down the valley of the Mississippi and up the Ohio to the borders of Virginia and Pennsylvania. The Seven Years' War, which in Europe magnified the name of Frederic the Great, was fiercely fought on American soil as well, for in that struggle the Yankee soldier fought side by side with the Regulars of George III.; and, united, they settled for ever the vexed question as to whether Canada should become French or English. In the glorious battle where the noble Wolfe lost his life, on the plains of Abraham, was decided the momentous question as to whether Anglo-Saxon or Latin civilisation should prevail in the Hinterland of the American colonies. Thus we see that before the Yankee soldier had been 150 years on American soil, he had not only driven before him the most warlike savages recorded in history, but had imposed his language and his civil institutions along the whole of the Atlantic sea-board, from Halifax to Georgia, and cleared the road for a westward expansion.

In 1776 commenced another Seven Years' War in which two British armies were successively defeated and made prisoners; the one in 1777 at Saratoga, and the other in 1782 at Yorktown, in Virginia. The English in America numbered then nearly three millions. They were, successful because they were Englishmen fighting for their rights under an English constitution, and had on their side a large proportion of their fellow-Englishmen in the old country, as well as some of the foremost political thinkers in Parliament. The Yankee soldier of 1776 became a rebel with the same stern realisation of duty as had impelled the men who took up arms against King Charles. Benjamin Franklin, John Adams, and George Washington were as thorough Englishmen in their blood and breeding as were Hampden or Pym or Oliver Cromwell. The American to-day refers to English authority when seeking the truth about what his ancestors accomplished a century ago, and for my part I know no work calculated to inspire an Anglo-Saxon with more pride in the soldiers who fought on both sides in that long Seven Years' War than the recently published volume by Trevelyan, called "The American Revolution." The British soldier may glory in having finally succeeded in the capture of Bunker Hill. The Yankee soldier is no less proud of having so long contested its occupation, in the face of such brave and well-trained Regulars. The historian of to-day concerns himself wisely, not so much in bragging as to who won the battle, or who controls the Hill, as in determining the conditions under which the fight was fought and establishing for the satisfaction of our descendants that both sides fought with courage and persistence. There were silly people then, who on the floor of the House of Commons sought to encourage the Ministry of George III. by calling the Americans cowards, and prophesying a speedy collapse of the rebellion. In our day we have heard people speak in the same manner of the Boers in South Africa. If the Yankee soldier one hundred years ago was a coward, what must we conclude of those

who failed in their efforts to conquer him? The fact is, that the American War, rightly studied in the light of such writers as Sir George Trevelyan, gives us the gratifying evidence that the Yankee soldier, after one hundred and fifty years' separation from the mother country, did not degenerate, but, on the contrary, developed several eminently soldierly qualities, chief amongst which was a capacity to fight without pay and to forage for himself.

When in 1783 the United States had received their mother's permission to set up housekeeping on their own account, it was not long before they became aware that in Florida and along the shores of the Gulf of Mexico, all the way to the Pacific Ocean, the Spaniards were making claims, somewhat akin to what France had put forward on the northern borders. In the early part of this century California was a Spanish province and Spanish friars controlled mission stations from Florida across Texas and the Rocky Mountains northward almost to British Columbia. Even in my time I have seen cattle grazing within the ruined walls of the Jesuit mission stations where formerly the native Indian spoke only Spanish. To-day only the Spanish names remind the locomotive driver that he is on the trail of a moribund civilisation. At the beginning of this century Spain's military and theological control extended from Patagonia to the Canadian border; and even after the revolt of her colonies the Spanish language persisted.

For some reason or other the Anglo-Saxon and the Latin make but indifferent partners in matters of colonisation. I will not trouble you with the reasons for this, but merely note the fact that about fifty years ago the United States Government organised a military expedition, which fought its way to the capital of Mexico, held that country in control for several months, and then retired in good order after annexing all the former Spanish possessions north, east, and west of Rio Grande. As this included the newly-discovered mining regions of California, Colorado, Nevada, Arizona, and New Mexico, to say nothing of Texas, the President of Mexico on that occasion had reason to complain that this precursor to the Jameson Raid had inflicted more than merely moral and intellectual damages.

The so-called Mexican War has not yet found its historian, but it richly deserves critical study. It was the first war waged by the United States against a foreign enemy. An army of 10,000 men marched from Vera Cruz to the City of Mexico, fighting its way against a warlike and capable enemy usually three times as strong. In Mahan's "Life of Admiral Faragut" there is some reference to this expedition, and in Henderson's "Stonewall Jackson" the military services of the Yankee soldier on this occasion are briefly sketched. It is to be devoutly prayed for, at least by Americans, that Colonel Henderson will give us a history of the Mexican War worthy to be placed by the side of his life of the great Confederate general.

In this Mexican War the United States transported to Vera Cruz an army numbering 13,000 Anglo-American Yankees. This army besieged and captured the strong works there; fought its way to Mexico, a

distance of 250 miles, through a country easy to defend, and entered the capital after overcoming a stubborn and well-planned resistance. In this war the Yankee soldier appears for the first time as a "Regular," properly uniformed and equipped as a national force. In the previous wars, notably those against the mother country, the Yankee soldier was for the most part a volunteer farmer-boy, who enlisted for a few months, and frequently chose to go home on the eve of important movements. It was a constant source of embarrassment to George Washington, that his army which one day was 30,000 men, might on the next be 20,000, or possibly only 5,000. He had no control, other than moral, over the troops entrusted to him by the different States, and therefore we may reasonably wonder, not that he gained so few victories, but that he gained any. In the war with England, from 1812 to 1815, the Yankee soldier again showed the virtues, and the shortcomings, of the merely volunteer system. Both these wars teach us that, whatever virtues the volunteer may possess in the way of courage and loyalty, they do not wholly compensate for the absence of training and discipline. The success of the Mexican War was due largely to the fact that the men in the ranks, as well as the officers who led them, had confidence one in the other—it was a force made up largely of real soldiers, led by trained officers.¹ By this time the value of West Point, as a military school, had become fairly well tested in the constant campaigning against Indian tribes, but it needed an expedition, like that against Mexico in 1847, to make the public fully appreciate what it owed to an institution of this nature. The influence of West Point on the Mexican War is readily appreciated when we mention such names as Grant and Sherman, Robert E. Lee and Stonewall Jackson, all of whom gained experience in that campaign. It was a war offering infinitely more difficulties in the way of transport, commissariat, and, above all, fighting, than the war which has just closed. In 1847 the American army had to be transported hundreds of miles, whereas in 1898 there was but a short stretch of 90 miles, from Key West to Havana. In 1847 the soldiers were suitably fed, suitably equipped, and properly led in action. It was a creditable campaign from beginning to end, worthy to be ranked with the one that will go down to history coupled with the name of Lord Kitchener of Khartoum.

¹ In Grant's *Memoirs*, I., p. 168, we read :—"A better army, man for man, probably never faced an enemy than the one commanded by General Taylor in the earlier engagements of the Mexican War."

Colonel Henderson cites this passage, and adds :—

"These troops were all Regulars, and they were those who carried General Scott in triumph from the shores of the Gulf to the Palace of Santa Anna."

"The volunteers had proved themselves exceedingly liable to panic."

"Their superior intelligence had not enabled them to master the instincts or human nature ; and although they had behaved well in camp and on the march, in battle their discipline had fallen to pieces. . . ." In the Mexican Campaign the volunteers, although on many occasions they behaved with admirable courage, continually broke loose from control under the fire of the enemy. As individuals they fought well ; as organised bodies capable of manœuvring under fire and of combined effort, they proved to be comparatively worthless. [*Id.*, I. p., 62.]

The war against Mexico was successful, if I may venture an opinion, because it was waged with a single eye to discovering and defeating the enemy. This sounds rather too elementary for an audience like the one I am addressing, for soldiers are taught to think that all statesmen are honest and that wars are waged exclusively for military and never for political reasons.¹

We now come to the great Civil War (1860 to 1865), waged over an area of country reaching from Pennsylvania to the Rio Grande and entailing a waste of life and destruction of property comparable only to the religious wars of the seventeenth century in the misery it inflicted. The United States in 1860 reached a population of 30,000,000, and these divided into two military camps in order to see which side could kill the largest number on the other side. Great volunteer armies were raised, and these, at the outset, were officered by men who were sometimes fitted to become soldiers, but generally were seekers after political notoriety, who believed that the war would be short and bloodless, and that they would soon return home with valuable local prestige. At the beginning President Lincoln thought he could overcome the Southern States by mobilising 75,000 volunteers, but finally one million of men on the pay-rolls of Uncle Sam proved none too many against an active enemy fighting on interior lines in a difficult country under the leadership of men imbued with the spirit of Stonewall Jackson. In that war it took about two years to teach the people and the press, and last of all the politicians, that war is a serious business and that it should be entrusted to men who know the business. Little by little the incompetent colonels and generals who had been selected for purely political reasons got killed or invalided home, and room was made at the top for the men who knew their business or had been trained in the stern school of West Point, supplemented by fighting on the frontier. The American who to-day reads Colonel Henderson's book to which I have already referred realises with mortification how much of the awful waste of life was due to incompetence on the part of the officers sent to the front.² The lesson was so severe, and has

¹ In one hour, General Worth's division, numbering 4,500 men, was disembarked; and by the same precise arrangements the whole army (13,000 men) was landed in six hours, *without accident or confusion*. (March 9th, 1847.)—Henderson's "*Stonewall Jackson*," I., p. 35.

Compare this with the wretched results achieved in the spring and summer of 1898.

² Henderson in his "*Stonewall Jackson*" says that in 48 marching days Jackson's army marched 676 miles—an average of 14 miles a day—March 22nd to June 25th, 1862.—[I., p. 496.]

[535, vol. I., Henderson's "*Stonewall Jackson*."]

"If the troops were volunteers, weak in discipline, and prone to straggling, they none the less bore themselves with conspicuous gallantry."

"Their native characteristics came prominently to the front."

"Patient under hardships, vigorous in attack, and stubborn in defence, they showed themselves worthy of their commander and the spirit which nerved the resolution of the Confederate soldier was the same which inspired the resistance of their revolutionary forefathers," etc.

been pointed so emphatically and lucidly by writers, such as Lord Wolseley and Sir William Howard Russell, to say nothing of American military authorities, that one might reasonably have supposed it impossible for such blunders to be again committed within one generation.

When the war with Spain was officially declared in April, 1898, the event took no one by surprise, for since the blowing up of the "Maine" in February of that year, the current of popular opinion was such that it could have been stemmed only by a President with considerable courage. So soon as it became evident that Mr. McKinley, so far from exerting independent influence, was merely seeking to steer in the strongest current, most Americans of my acquaintance offered their services as volunteers, and of course I did the same. My application was courteously declined, and I was not surprised at this, because all the military training I could point to had been gained on the field of merry war, at different autumn manœuvres of European Armies. I had been making a bicycle trip across Spain just before war was declared, and hurried from that field directly to Washington. The *London Times* had paid me the high compliment of inviting a few special letters from my pen, and of course I said I would do my best for them in case I was unsuccessful in obtaining a commission as volunteer.

In Washington I found that the heads of nearly every military department were, not only not graduates from West Point, but appeared animated with something akin to dislike for anyone who had enjoyed the education of that institution. The offices which had anything to do with Army promotion or contract were crowded with civilians prepared to serve their country in any capacity, but preferably as major-generals, or commissary captains. Pretty much every army corps was placed under the orders of a general who had entered the Service through other channels than West Point, and the commanders of divisions, brigades, and even regiments were almost uniformly men who owed their positions to political influence. The most important command, namely that of leading the main expedition to the presumable capture of Havana, was given to General Shafter, who was physically incapable of any other than office work, and whose sole title to recognition lay in the fact that he came from the same State as the Secretary for War. In the office of the Adjutant-General I met a young man whose previous experience of warfare had consisted solely in practising as an apothecary in a western town. He was complaining bitterly because, having strong political backing, the President had failed to give him what he wanted. On expressing my sympathy with him he unbosomed himself as follows:—

"I want to be captain in the quarter-master department, but he's gone and made me a colonel of Engineers."

I told him he ought to feel very happy, because a colonel was more important than a captain, but the young man would not see it in that light, and I asked him how it happened. "Well, when I applied for captain quarter-master, the President looked down the list of vacancies and said there was none in that department, and then he looked down another list and said, the only thing left was a colonel of Engineers."

"But," I said, "I suppose you know something about machinery or building, or electricity."

"Nothing of the kind," said he; "I'm a drug-clerk, and that's all I know about colonel of Engineers."

On the same day there came to Washington a graduate of West Point, who had left the army and was receiving a salary of £6,000 a year, as manager of mines in the Rocky Mountains. He came with no other credentials than that he was an honourably discharged professional soldier, doing his duty at the first sound of war. He applied to the Adjutant-General after elbowing himself through a dense throng of office-seekers, and was met with the stereotyped remark, that in order to get military employment he must first secure the political influence of a Congressman or some other kindred factor. That young man went back to his mines much enlightened on the subject of official patriotism, and no doubt it was his place that was filled, or at least occupied, by the young vendor of patent medicines.

The War Department had established a huge camp at Tampa in Florida, and here were gathered together about 15,000 men of the Regular Army together with a few Volunteer regiments. At Tampa was no evidence that any staff officers existed. Individual regiments arrived at any date convenient to the railway companies, and were detrained as so much cattle turned loose to browse for themselves. No staff officers were on hand to direct regiments to suitable camping-grounds, and regiments brigaded together might find themselves camped several miles apart. In a State, famous as the paradise of fishermen, the troops suffered from want of water, and, in consequence, before the expedition was ready to start for Cuba, half of the men were suffering from preventible diseases and all of them had their vitality seriously impaired by long weeks of inactivity in a climate like that of Singapore or Hong-Kong. Before the first transport left Tampa the American army of invasion presented many of the features incident to a disastrous campaign. To say nothing of disease, there was a complete breakdown of all the machinery which has to do with providing the soldier with food and equipment. Not a single regiment in Tampa had uniforms suited to summer in the tropics; not a regiment had any transport, wagons, or animals, and even the medical department suffered in this respect. I am speaking here only of my personal experience while guest in a regiment of Regular infantry, and when I generalise it is on the authority of officers who know what they are talking about. The weather was so hot and the deep white sand so light that there was practically no drilling or manœuvring possible during the many weeks prior to the invasion of Cuba. The railway tracks leading into Tampa were for many miles encumbered with freight cars, but no one knew where to find the stuff they particularly needed, and loads of ice melted away while hospitals were begging for something cooling. Brigadier-generals wandered aimlessly about, enquiring for the regiments they had been appointed to command and secretly trying to learn the elementary duties of a second lieutenant. The hotel of the place was crowded with staff officers, who were as helpless in their new

uniforms as a clergyman in a conning-tower. Everywhere there was the smell of political jobbery; the selection of the camps, the selection of the railways, the selection of staff officers, the wholly inadequate transport service—at every point I came upon painful evidence that the war was being turned to profit by politicians more or less honest.

You ask, no doubt: What was the Regular United States Army doing all this while and what had become of the well-trained West Point graduates who should have been brought to the front in such an emergency? The whole American Army in time of peace numbers less than 26,000 men, although since the war this number has been provisionally raised to some 60,000. When I reached Tampa there were 15,000 Regulars in camp, officered, so far as the regimental units alone are concerned, with as capable a set of men as it has been my fortune to mess with. I mingled freely with both officers and men, not only in the regiment whose guest I was, but in others as well. Like most Americans I had never seen American troops mobilised for war, and I was particularly anxious to note their appearance as compared to men in European Armies. Many of the officers I had known at West Point and every facility was given me of doing exactly as I chose. In the men's tents I found soldierly cleanliness and tidiness. No German troops could have shown a higher state of efficiency in what pertained to military essentials than did the Regulars at Tampa. Amongst the officers I found great satisfaction with the quality of their men, and it was easy to feel, after a very few days in camp, that the men were thoroughly satisfied with their company commanders. The privates were, as a rule, about 6 feet in height, and in age averaged between 20 and 30 years. They were bronzed like English troops returning from India or the Soudan, for most of our men had seen service on the Western frontiers. One regiment which had been stationed in California was composed entirely of re-enlisted men, and it was their boast in the regiment that they never had a raw recruit. This regiment had been twelve days on the train before reaching Tampa, and the senior captain told me that with all the temptations offered to them, there was not, on the whole journey, any occasion for exercising more than routine discipline. With two companies of this regiment I subsequently spent a week on the northern shores of Cuba, partly for purposes of reconnoitring and partly to establish communications with the insurgents' army.

We embarked on a crazy old paddle-wheel craft called the "Gussie," which had great difficulty in making 8 knots an hour. The men had no bunks, but slept where they could find a place on the decks, and when it rained they had no shelter but what they managed to improvise by means of tarpaulins. One naturally grows intimate with mess-mates and fellow-passengers under such circumstances, and here again I felt myself amongst men who individually required no discipline but what appealed to the common-sense of an intelligent soldier.

The eloquent words which Colonel Henderson has used in describing the typical Yankee soldier of the Civil War seem almost as though intended for the men who to-day hold together the military traditions of the American Army.

On board the transport "Gussie" were about 100 Regulars, and in the week that we were together not only was there no single occasion for punishment, but beyond the perfunctory mounting of guard at night there was scarcely occasion for the presence of an officer until the fighting commenced, and then the officer's work had more to do with guiding than driving forward his men.

One day our transport cast anchor as close as it dared to a line of breakers some 30 miles westward of Havana. It was broad daylight and the town of Cabañas was known to be about two miles away and to have a garrison of uncertain strength. It was determined to put on shore here one or two Cuban generals, along with some ammunition and horses. So boats were lowered and the disembarkation commenced. As I have said, it was broad daylight, but such was the opinion already entertained of the Spaniard by our men that they rowed ashore in batches of ten or a dozen, with no more concern than if landing for a pic-nic. Our ship lay within easy rifle range of the woods which grew close to the water's edge, and we had no facilities beyond those offered by the ordinary coasting craft, manned by its usual crew of half-a-dozen deck hands. But a call for volunteers showed that plenty of the men were familiar with boats, although in a heavy surf nearly all of them were capsized and had to struggle ashore under difficulties. Whilst about half the men were ashore, the Spaniards opened upon us and the Mauser bullets commenced to whistle about our ears, penetrating our venerable transport as though it had been a cardboard box. For the moment it looked to me as though we had been well trapped, for our anchor was down, we were a magnificent target, our crew was out of the ship and the smallest piece of artillery could have sent the "Gussie" to the bottom of the Caribbean Sea. Every man knew this, but it made not the slightest difference in the manner of their work. While the crackling of small arms in the woods was going on, an officer rowed off to the "Gussie" with the information that a couple of thousand Spaniards were attacking them, but that they could hold their own when the rest of the men should have landed. He gave us an indication as to where we could aim our machine gun without hitting our own people, and then returned to his post. The disembarkation continued just as quietly as though it were a practice manœuvre.

I saw no one ostentatiously exposing himself nor did I see anyone hesitating when orders were given. The Spanish fire was finally silenced, the enemy retired and the little landing party ultimately got aboard once more, one of the men bringing with him the hat and sabre of a Spanish officer.

The United States does not give medals to its soldiers, but if there were such distinctions I don't know how, in that particular affair one man could have been honoured more than the other. Conspicuous gallantry is a noble thing and deserves reward, but there is a gallantry equally deserving, namely, the one that is necessarily inconspicuous. Three times that little body of American Regulars were under fire during that short expedition, and each time I noted the same thoroughly Anglo-Saxon characteristics.

Whenever you may hear of the swaggering and bragging Yankee you may be sure that it is not amongst officers and men of the Regular Army. Those men do their duty silently and rarely come before the public, because as a rule they represent no political influence. All the swaggering and bragging is made by the political soldiers who become intimate with newspaper reporters, and keep their names unduly prominent before the ignorant readers at home. Each day that I lived in camp at Tampa the daily papers brought down from Washington the news of military appointments and promotions, and each day, as they read these lists the officers of the Regular Army made their private comments, but nothing more. The West Point graduate who had perhaps been twenty years in the Army and was still commanding a company, saw that day after day civilians were being given command of regiments, brigades, and even divisions. If a Regular officer did get an important position his case was so conspicuous that it served to prove the shameful rule. A young friend of mine who had only been two years out of West Point was detailed from his regiment on to the staff of a civilian brigadier-general. This young lieutenant was killed in battle. He told me a short time before his death, with grim humour, that he was practically a brigadier-general in all but rank and pay. His brother staff-officers were civilians or political creatures, and his brigadier-general did not know the elements of commanding a company, let alone a brigade. All the military work of this brigade, and there were many like it, was performed by a West Point stripling who was never heard of, while the newspapers resounded with the war-like efficiency of a political brigadier who would have made an intelligent charger blush with shame.

I am conscious of having spoken with considerable frankness on a subject which the courtesy of Englishmen has handled with striking reticence. Officers of the American Army are muzzled by the rules of the Service and the truth regarding the Spanish-American War cannot be known until access is had to the private letters of participants. At Tampa, I found on my arrival more than 150 newspaper correspondents, but not one of these communicated to the public the scandalous manner in which the Regular Army was being administered. To be sure the larger proportion of newspapers were represented by men whose literary activity had been hitherto displayed in the description of police court scenes and social events. Among the rest, however, there was a wholesome dread lest they might incur the displeasure of the Secretary of War and thus prematurely cut off their means of earning the salary of an alleged war correspondent. Not a day passed in camp that officers whom I knew did not beg me to expose the true state of the Army, and for some time my obvious reply was that as they were better informed it was for them to publish what they knew. But, of course, that was impossible, and so finally I published in the *Times* a few simple truths for which I had the best authority, and which, I regret to say, called into question the personal and political honesty of that member of the Government, chiefly responsible for the scandals which have since appeared. Of course, my letter to the *Times* was printed with the full consciousness of

probable consequences to me and to any officers who might be suspected of having assisted in that composition. I was not surprised, therefore, to discover that the War Administration in Washington had set in motion machinery calculated to discourage any further revelations of the same nature.

So I packed my valise and landed in Manila, where I found the Yankee soldier about the same as in Tampa, only a little more so. There would have been no difficulty in equipping all the troops in the Philippines with suitable summer clothing. It required nothing but a cable to Hong-Kong, and the clothes would have been ready by the time the first transports had come half-way across the Pacific. Wonderful to relate, at Manila was a West Point graduate in command, General Merritt. But let us remember that all the important commands were given away to volunteer officers before anything was offered to the one soldier who had conspicuous claims. When General Merritt was sent to Manila, the Government offered him two or three thousand volunteers, and the whole expedition was looked upon in Washington as a convenient means of putting out of the way an officer whom the Secretary of War personally disliked. General Merritt soon got tired of his volunteer regiments, and quitted Manila about the 1st of September, leaving behind him a confusion which promises to persist for some time to come. In my talks with the different volunteers in and about Manila, I was struck by the contempt they entertained for their officers and the strong desire they had to return home. After experience with the businesslike behaviour of the Regulars at Tampa, the contrast was very striking when one had to do almost entirely with volunteers. And the reason is apparent. The officers of volunteers were mostly appointed for political reasons, and these in the hour of trial frequently showed selfishness, if not lack of physical courage. The men, on the other hand, not having adopted war as a profession, were perpetually thinking of their business interests at home, to say nothing of their family ties. They had embarked upon this war as one offering much glory within a very short space of time, and it was a terrible blow to them when they discovered that their work consisted in doing camp drudgery amongst Filipinos in a very hot and unsanitary town, with no recreations and not even suitable clothing or quarters.

But the raw material of the Yankee soldier in the Philippines was excellent. In his broad-brimmed felt hat and blue flannel shirt, brown gaiters, and dingy blue trousers, he lacked the smartness of the European, but he towered above the little Filipino like the black natives of Delagoa Bay over the little Portuguese soldiers who guard that magnificent harbour.

Success in the popular mind is apt to justify the means employed, and this is particularly true in war. For this very reason the Spanish-American War deserves close attention, for it promises to lead us towards a false appreciation of our military efficiency. There are serious abuses under which the Yankee soldier labours to-day which call for remedy, but will probably call in vain, because the cry of the soldier is drowned in the shouting of politicians who point to the conclusion of

the war as evidence that the Army administration was excellent. In May of 1898, while the army of Cuban invasion was still in camp at Tampa, I stated in the public prints over my own name what every professional soldier on the spot knew, but was prevented from saying. The men were becoming daily weaker because the camps were in unsanitary places, and there was a scarcity of water; not a single regiment was up to its nominal strength, and most of them had never drilled together. There was no staff, in the modern sense of the term—in fact, the army at Tampa represented a number of excellent fighting units, but lacked the cohesion and organisation which convert a brave mob into an army. Of course I urged as strongly as I could that the men should be properly drilled in camps of exercise where brigade and divisional movements at least could take place, in order to give the commanding officers some slight experience in the mobilisation and fighting of larger forces than single regiments. This would have thoroughly exposed the hopeless state of the military machine and lead to immediate reform. But unfortunately the political war leaders dreaded nothing so much as reform. They instinctively felt that their only hope of maintaining themselves in exalted rank was to push the army as far as possible away from home and into military situations where the Press censor could be appealed to in their favour.

It was not surprising therefore that my disclosures were met by a chorus of denunciation. The *New York Herald* printed interviews with the heads of different military departments, including the Commander-in-Chief, the Adjutant-General, and many other popular heroes. Their opinion at that time was that the American soldier was magnificently equipped for war, from the Falstaffian sword-belt of General Shafter down to the brown canvas leggings of the last recruit. The transport was declared to be perfect, the Quarter-Master and Commissariat Service pronounced to be superior to anything in Europe, and in short something like 150 newspaper correspondents raised the question as to whether I should be strung up on the nearest tree, or generously despised as a harmless lunatic.

Since then the Commander-in-Chief has given his public testimony to the fact that several, if not all, the military departments were scandalously inefficient; that medicated meat had been served to the men; and, in short, he publicly confessed that at the beginning he was shockingly ignorant or else had been culpably silent.

The past is past, but what of the future?

We have had an excellent epitome of the lessons taught by the Spanish-American War, so far as the United States Navy is concerned, from the hands of that gallant and luminous writer, Admiral Colomb. The spirit of generosity is strong in the British critic of to-day, and it is easy for an American to discover that the English military writer who would unsparingly expose the faults of his own Service, as did Sir William Howard Russell in the Crimean War, might hesitate to write of Tampa in 1898 as freely as did that prince of war correspondents about the time of the battle of Bull's Run. Sir William aroused a storm of

indignation in 1861, not so much because he wrote the truth, as because he published it in an English paper. To-day, thank God, he would be cordially welcomed if he told the truth in the same manner and for the same purpose. He would not be thanked by professional politicians, but his words would evoke grateful acknowledgment amongst serious people and particularly in the Regular Army.

We want some Englishman to discuss the lessons of this war from the military standpoint, as Admiral Colomb has from the standpoint of a sailor. The American Congress has enlarged the Standing Army, but has taken no steps to obviate the most glaring abuses in all that pertains to the feeding, transporting, and, above all, the military conduct in time of war. So far as the action of Congress is concerned, the public is practically told that henceforward we may safely abolish all special instruction in engineering, gunnery, and staff college work generally, and when war breaks out select our future Napoleons and Kitcheners from amongst ambitious politicians, or self-sacrificing shop assistants. When the army was assembled at Tampa, and while the wharves were lined with transports and piled high with most precious munitions of war, my friend General Ludlow, whom many of you no doubt recall as military *attaché* in London, informed me that there was not a single gun mounted to protect the harbour against a Spanish attack of the mildest description. New York itself had only two first-class guns in position, and with the exception of these two there was not from Halifax to the Mexican Gulf a single harbour which could not have been laid under contribution by a Spanish gun-boat and a little enterprise. When the war opened three 16-inch coast-defence guns of about 120 tons lay in the mud at the Bethlehem Iron Works, in Pennsylvania. They had been accepted and paid for by the Government many months before, but as Congress had declined to vote money for mounting them they lay rusting during the war, and for ought I know are still there.

England had at Tampa an excellent military agent in the person of Captain Lee, of the Royal Artillery, and many an interesting exchange of views I had with him, but unfortunately the public will never know all that he thought until sometime after he is dead, which means half a century at least. There was another very competent critic, Major Shiba, of the Japanese Army, with whom I also had much interesting private intercourse. Major Shiba, from his experience in the Chinese War, knew that it was possible to transport a large army for many hundreds of miles; to land that army in perfectly good marching condition, on the shores of a hostile country, and after that to continue successful military operations on a large scale, without scandals in any military departments. English naval officers and American commanders of Japanese transports in that war have given me abundant assurance that the troops of the Mikado landed upon the Chinese soil with as much order and in as perfectly equipped condition as though it were merely an everyday peaceful manoeuvre. Every Japanese company, battalion, or regiment found its stores at the proper place, and each unit marched directly away from the beach upon a thoroughly matured plan. When we reflect that modern

Japan dates only from 1868, and that within that short period she has learned the highest lesson of modern warfare, we are justified in feeling some surprise at our utter incapacity to carry 25,000 men with the necessary military concomitants for the short and quiet run between Tampa and the shores of Cuba. There is not an American soldier who is not ashamed of the disgrace which his Congress has brought upon him as a member of the Anglo-Saxon family. By God's providence the enemy whom we attacked was hopelessly unfit for resistance of any kind, and the war would have terminated in favour of America even if the Yankee soldier had gone out to battle with no other weapons than base-ball clubs. The American soldier is mortified by the work done in this war, because it was unworthy of a people distinguished for its organising capacity, its shrewd business sense, and above all its mechanical expertness. On the three occasions when I saw our troops engaged, the Spaniards were invisible because they used smokeless powder, while we made a magnificent target by our smoke alone.

Let me not be understood as depreciating volunteers in a national war, or insisting that things are always well done by Regulars. No student of history can fail to recognise the enormous services rendered to their country by the German volunteers of 1813, and American history teaches us that we owe what we have to the national enthusiasm represented by voluntary enlistment. But in our past wars the President and Secretary for War have procured the best officers in the drilling and leading of the volunteers. The Revolutionary War produced George Washington and a dozen subordinate generals, whose work to-day bears inspection. The war of 1812 produced General Jackson, who subsequently became President. The Mexican War and the Great Civil War brought into relief men whose names to-day are the delight of soldiers—I have already mentioned Grant and Lee, Sherman and Stonewall Jackson. The Spanish-American War has come and gone, and I wish I could mention a name above the rank of colonel that does not smell of the politician's ante-room. I know West Point graduates of twenty years' honourable service who go back to their regiments as captains, and are now doing the same duties which they did the year they graduated from the Military Academy. Some of you, better informed, may be able to mention a few West Pointers who have received a promotion. It will not take you long, and those that you mention will largely assist in establishing my general proposition. Splendid men there are in the American Army who did not graduate at West Point, and there is no jealousy of them amongst genuine soldiers. The serious and rather alarming fact remains however that in this war the military authorities, from the President and his War Minister down, have appeared to regard special military education, particularly West Point education, as a drawback which could only be forgiven to one who combined with his military knowledge a certain amount of political liability.

In parenthesis, I may add, and I think my friend Colonel Henderson will endorse me, that at West Point young men are taught not only to

shoot and ride, but also to tell the truth without fear of consequences. This habit of being honest has wrecked the careers of many of my acquaintances who left West Point with a most enthusiastic love of their profession. These, and such as they, have not consented when dishonest contractors and still more guilty commissary agents, have sought to make them parties to defraud the man in the ranks.

And that is one reason why the Yankee soldier respects the strip-ling fresh from West Point, and, in spite of Falstaffs and political generals loves the Service and sustains the standard of Anglo-Saxon manhood.

Major A. W. A. POLLOCK (retired pay late Prince Albert's Somersetshire Light Infantry):—I should like to ask for some information with regard to the storming of San Juan Hill. The action taken by the Gatling battery under Lieutenant Parker was described in an article written by him in the *United Service Magazine* three or four months ago. I have never been able to get any further particulars from other sources. The article itself did not quite explain the situation. May I ask whether you saw the incident?

Mr. BIGELOW:—No, I did not.

Major POLLOCK:—That is unfortunate. The case is unique. We had not previously heard of machine guns galloping to the front and giving the necessary impetus to an assault. I was in hopes that you might have been able to give us some further details.

Mr. BIGELOW:—The nearest I came to that was an expedition, on a transport, with Colonel Dorst and Captain O'Connell. On that trip I was much impressed by the excellence of the enlisted Regulars, of whom we had one hundred on board. They were three times under fire. The Spaniards surprised us by a well-directed and sustained fire of small-arms from out of the thick woods; but our men landed and did their work as coolly as one could have wished. That movement up the hill of Santiago was a beautiful soldiers' battle. Marching up Bunker's Hill three times under fire was a splendid march, but it was not a soldiers' battle. The officers went with the men and led them; but in this fight in Cuba the influence of commanding officers was very small. General Shafter did not know where he was. There was no cohesion between the different brigades and divisions. The men were told to stand and be fired at. They got tired of standing like that, and thought they might just as well go forward and get shot at as stand still and get shot. The Regulars marched through the 71st Regiment of Volunteers, brushed them aside and captured the position. The "Rough Riders," who were sandwiched in between two Regular regiments, moved forward bravely. The commanding generals in the rear did not know what the soldiers were doing until afterwards.

Rear-Admiral SWINTON C. HOLLAND:—May I ask one question about the commissariat? I gathered from some military officers who visited Manila, that it was remarkably good, and that difficulties were easily overcome. There was a great difficulty about the water, because all the water that the troops drank had to be boiled. I should like to know whether the lecturer can give us any information on the subject of the commissariat.

Mr. BIGELOW:—When I landed at Manila, my idea of the Filipinos, and of the browns and the yellows and the blacks, was that they should be made to work, while the American soldier had earned the right to stand about and see it properly done. But I found then that the American soldiers, those great long-legged Western volunteers, were lifting paving-stones about in the broiling sun—the paving-stones which the Spanish garrison put up at the forts

at the entrance to the Passig River. I then congratulated myself that I was not a volunteer. I do not know how I can explain to you the oppressive heat and the smells of Manila—about the only things the Spaniards left behind them there. The men were cooking, in broiling barrack yards, on great wood fires, as though it were not enough to sit in the shade and watch someone else do the work. They were cooking in a great big iron thing, as big as a steamer trunk, full of soup or some mess, and then they would have to carry this enormous weight to some distant part of the city in the broiling sun. To see these men, who had come in as conquerors, doing all the menial work, while all the Filipinos roosted about on the fences with their tongues in their cheeks, was an education in colonial expansion. When I saw General Merritt up at his palace, a very nice cool place, he asked me how I liked things. I told him very much what I have told you, that it was not my idea of the Anglo-Saxon domination to have the Filipinos watch and smile while these volunteers were doing the work, and General Merritt was rather huffy at it. "It is very easy to criticise," said General Merritt. "Yes," I said, "I think it is under the circumstances." And he got huffier still. General Merritt has since married, so I do not bear him any grudge.

THE CHAIRMAN (Major-General J. F. Maurice):—I should like to say one or two words suggested by some of the questions that have been put to Mr. Bigelow. You would not wish them to convey a wrong impression of the thoughts of this meeting. I think we all feel that it has been as a thoroughly patriotic American that Mr. Bigelow has wished to come before us this afternoon. There is nothing that we of the cousinhood on both sides of the water recognise as the patriotic duty of an Englishman or of an American so much as the bringing out of the truth, in order that things that are wrong may be put right. We do not consider it, as unfortunately has been assumed in another country quite recently, to be the one duty of everybody to smother over every error in order to preserve the honour of the country. This appears to me to apply strongly to some of the things which Mr. Bigelow has said, especially to one curious fact which he has pointed out—one which my own experience confirms—namely, the difficulty of getting out the truth, even among a great Anglo-Saxon race like the Americans. Some time ago I was asked by an American magazine to give, with my name, a study, as an English soldier, of that very campaign in Cuba of which Mr. Bigelow has been speaking. I did my best to get at all the facts I could, and though I do not say that I came absolutely in every detail to the same conclusion as Mr. Bigelow has done, yet I did arrive at this conviction, that any friend of America must most heartily, of all things, wish to bring to the mind of the American people—and as we have a large audience of ladies to-day, I may say that I wished to appeal especially to the ladies of America—to realise that you cannot destroy an army as we did after the great war, and then, as we did during the Crimean War, suddenly fling the remnants of it upon the shores of a hostile country, and afterwards try as we did to make other people than the nation responsible for what follows. You cannot, as America did after the great Civil War, destroy what was then one of the most powerful armies in the world, scatter it to the four winds, and get up another effective organisation on the spur of the moment. I fully believe in that magnificent institution at West Point, which I look upon as the best educational military establishment in the world. I have seen it and studied it pretty closely. It is an admirable training school for officers, but more than that is required if you want an army ready for an active campaign. Amongst other things, as Mr. Bigelow says, you must put the officers from it in commands and not fancy that every man from the counter or the plough will do the work as well. To return to my point about the ladies of America, I say they were mainly responsible for urging on their brothers and sons to a war before the army was ready for it. I did try to bring home to them the facts that I have mentioned, but the magazine I speak of feared to let the facts be known. It is unjust to

fling upon the shores of a foreign country an absolutely untrained army, and then try to hang different people for your crimes. It is necessary, for the health of a nation that these lessons should be learned. They are lessons which have in the past been often very necessary to us in England. You know very well the excitement which comes over a nation at certain times; you know the great volume of public opinion which is aroused on the outbreak of war, and it was influenced largely, as I say, by the ladies of America. They were in their generous enthusiasm very anxious that matters should be brought to a climax speedily. They said, "Why should General Miles keep the army at Tampa until the good weather comes?" But to a soldier it was evident that even apart from the importance of choosing the right season of the year, several months' training were necessary if it was not to be murderous to send that army into a place in which hygienic and other considerations must be attended to by an organisation established and well understood, not trusted to individual judgment. The men required to learn both drill and organisation. General Miles had the courage, in the face of the public opinion in America, to insist upon that, and I think he deserves the greatest possible credit for restraining the impatience of the nation. He was unable in the time he gained to change all the conditions which required improvement, and of which Mr. Bigelow has given you an idea to-day. But the great mistake which is constantly made in speaking of this late war arises from a popular misunderstanding of the whole story of the Civil War between North and South America. People have got into their heads an idea, and it is a true idea, that "volunteers" did then become a very fine army. They were a magnificent army *at the end of the war*; that is to say, that after five years of fighting these "volunteers" had become trained soldiers. But popular opinion having a very short memory, draws the conclusion that therefore the "volunteers," untrained as they were at the beginning of the war, were quite fit to take the field. In fact, on the contrary, those "volunteers" came to the most hopeless, miserable, and utter disaster. The "volunteers" of the end of the war, led by experienced and war-tried officers, were as unlike the "volunteers" of the beginning of the war as two sets of men could be. The name "volunteer" is remembered - the terrible experience of the war is forgotten. The conclusion is drawn that any men whom you call "volunteers" are just as fit as anybody else to carry on a great war. That is a most fatal conception, and I think we ought to be extremely obliged to Mr. Bigelow for having brought the subject before us in this Institution to-day. I can assure you that during the late manoeuvres I constantly came across people who had acquired an impression from the lies which have been wilfully circulated about the Cuban War, in order to flatter popular vanity, that an untrained army and untrained men carried everything before them with such complete success, that it is all nonsense to think that you really required organisation or discipline or training in an army; they really had come to believe that you might safely trust to an untrained body of volunteers in war-time. Therefore, I think, ladies and gentlemen, for ourselves and America I may venture to tender to Mr. Bigelow your most hearty thanks for this interesting lecture.

MR. BIGELOW:—Thank you, very much. You have let me off very easily.

THE HIGHWAY OF THE NATIONS:

i.e., THE TURKO-PERSIC-INDIAN COMMERCIAL ROUTE
BETWEEN EUROPE AND ASIA, AND THE CONSIDERATIONS
INFLUENCING ITS ALIGNMENT.

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INTRODUCTION.

THE communications to be considered in this paper are those between Europe and Asia, with special reference to the Turko-Persic-Indian line, and the considerations influencing its alignment; and although within its short limits we will incidentally touch upon the commercial, political, and military values of the various sea and land highways by which intercourse between these two continents is conducted, yet it will treat most fully of the important Turko-Persic line, the highway across Asia; the centre girdle of the earth, connecting by the shortest line the Atlantic and Pacific Oceans; the highway between the East and West, and hence called by us the "Highway of the Nations," and, in conjunction with the Panama Canal, the shortest girdle likely to be put round the globe and of great importance to the two Americas. It is written under the influence of the hope that it may lead to some consistent European policy; that European interests may cease to be the sport of selfish and ephemeral administration, a weather-cock swayed by that specially fickle breeze which may for the time being happen to constitute the result of the sum of the jealousies of the European nations; that they may be determined by the true requirements of Europe and the East, and her immediate Asiatic neighbours bound to her by the chain of mutual interests; and that once determined, and some finality arrived at, Europe may set herself to further them steadily, and with no wavering of purpose, by such means as she, from time to time, may find opportunity to give effect to and by the one or more of her Powers whose interests are most directly affected.

Diplomacy fails, European military policy fails, one or more of the European nations enter on campaigns only to withdraw from them contented with ephemeral results, from change of policy, from want of

confidence in themselves, and for want of a goal for their united action ; indeed, it may be said that hitherto Europe's Asiatic policy can be best described as a succession of hysterical manœuvres carried out at the cost of the soldier to meet ephemeral ends. The true goal of their efforts, the preservation of the balance of power in Asia, is not kept steadily in view, and European-Asiatic interests now require a war council composed of their most renowned statesmen and experienced generals. Such men abound and they are the nations' best advisers, because trained in the best schools of experience. It is a matter of history that European interests cannot be satisfactorily safe-guarded by the temporary joint action of one or more of her Powers and that the advice of such a war council is essential, otherwise petty interests and jealousies have a fictitious importance given to them, and are all-powerful, whilst all-important ones have to give way to them. Nations cannot look to mob meetings to guide them in their policy on great questions ; here the ministers of the Powers must clearly lead, for the responsibility of doing so is one imposed by office.

This generation is the pioneer of the next and must secure for it all that may be necessary for its well-being. No one desires war, and in the interests of peace Europe must act in concert and place herself in a position to prevent it by knowing where and how to strike, and, by rendering action possible, make the power of menace a real power and something more than an empty threat. At present action is impossible in many directions for want of communications suited to modern armies, which nowadays cannot filter through six hundred miles of difficult country, by pack-roads, to oppose a first-class Power.

Nations are often called upon to make large sacrifices to gain even a sense of security. The reality of true security, to be gained only by forethought at a comparatively infinitesimal cost, is too often neglected, and a lavishly costly expedient, indifferently able to supply its place, is adopted in the end. History unfortunately abounds with instances of such. Let Europe endeavour to become wiser in her mature age, and let her set herself to find out her needs, for she may have to battle for existence, should Asia pass under the dominion of one autocratic Power ; let her therefore place herself in a position to do so to advantage—*it will pay*.

It is pleasant to think of, and expatiate on, the possible future power of the Europe commonwealth, but we must bear in mind that if she would remain strong she must unify her influences, lose sight of no vantage ground, overlook no geographical district of importance, ignore no nationality forming her environment, and, foreseeing the importance of allowing any Power other than their present possessors to occupy certain stretches of country, consider herself in duty bound to take measures to maintain the *status quo*, and to justify her action by requiring of their rulers obedience to her wishes, in return for her good offices and strengthening influences, which need continue only to such time as, by their progress in civilisation and humanitarianism, they can protect and govern themselves.

The prestige of the Sultan is still great, and he can best stay bloodshed and stave off bankruptcy; his will may be good, but his government is corrupt; he has under pressure done much, and with time and patience more will be effected under European guidance. Much the same may be said of the Shah.

The southern expansion of the great Northern Power, now more a Power of Asia than of Europe, and whose centre of empire lies in Central Asia, out of her own sphere and into the zone of influence of Europe, and her too great solicitude to control commerce and religions and communications wholly within it, are dangers to Europe, and its further encroachments would lead to that Power running rough-shod over her—a final over-running of Europe by Asia. This danger is enhanced when we consider the power that Russia is becoming in Northern China; that Bandar Abbas is already called by her the Vladivostok of Russia in the Persian Gulf; that she seeks by connecting Central Asia with the Gulf by means of railways from Ashkabad *via* Mashad, Herat, Birjand, and Kerman to Bandar Abbas, and from Tiflis by Kars, and the Turko-Persian frontier, to render herself free of the Dardanelles and the Suez Canal, and to cut off British interests to the westward of the former line, and that she gives herself out to be the vindicator of Iran! With a motto of patience and velvet to cover her claws a nation can achieve supremacy in time; and, looking into the dim and far-distant future, and judging of coming events, if they are not forestalled, by the lowering shadows that they cast before them, one sees a vision of Russia extending from the Baltic to the Chinese Seas, from the Arctic Ocean to the Black and Caspian Seas and the Oxus and Yellow Rivers, in conflict for the dominion of the old world with Europe and Southern Asia, *i.e.*, the North of the old world arrayed against the South.

Russia's legitimate interests can be secured without her further southern expansion. The Black Sea is the outlet for her trade, and an outlet into the Persian Gulf is not vital to her commerce; what she seeks there is not a commercial outlet, but a naval base and arsenal; to understand this, the people of Europe must be taught the geography of Persia and Turkey-in-Asia.

The interests of Europe in this unnatural southern expansion of the Northern Colossus can be gauged from the opinions of the Austrian War Minister, who in 1858 predicted that she would try to satisfy her cravings for an open seaboard by operating through Asia:—"She will not," says this authority "reach the shores of the Persian Gulf in one stride, or by means of one great war; but, taking advantage of Continental complications, when the attention and energy of European States are engaged in contest more nearly concerning them, she will endeavour to reach the Persian Gulf step by step—by annexing separate districts of Armenia, by operating against Khiva and Bokhara, and by seizing Persian provinces," *i.e.*, by steadily carrying out the policy of Peter the Great, which was "to hasten the downfall of Turkey and Persia, to re-establish through Syria the ancient commerce of the East and enter into the two Indies, which are the stores of the world."

"The most important lines that Russia must keep in view for these great conquests are :—

1. The line from Kars to the valley of the Euphrates and Mesopotamia.
2. That from Erivan, by lake Van, to Mosul, in the valley of the Tigris to Mesopotamia, and thence after junction with the first line, to Baghdad.
3. That from Tabreez to Shuster in the valley of the Kercha, where it joins,
4. the road leading from Teheran, by Ispahan, to Shuster and thence to the Persian Gulf. . . . Once in possession of the Euphrates, the road to the Mediterranean, *viâ* Aleppo and Antioch, and to the conquest of Asia Minor and Syria, is but short.

"It is clear that all these lines are intersected by the line of the Euphrates, which, running in an oblique direction from the head of the gulf, north of Antioch, to the Persian Gulf, passes along the diagonal of a great quadrilateral, which has its two western corners on the Mediterranean, its two eastern on the Caspian and Persian Seas, and so takes all Russian lines of advance in flank. From this it is evident that the secure possession of the Euphrates line is decisive, as regards the ownership of all land lying within the quadrilateral. It must therefore, be the political and strategic task of Russia to get the Euphrates line into her hands, and that of her enemies to prevent her doing so at any cost.

"The great importance of a railway along this important line, which connects Antioch with the Persian Gulf, follows as a matter of course. It is the only means by which it would be possible to concentrate, at any moment, on the Euphrates, or in the northern portion of Mesopotamia, a force sufficiently strong to operate on the flanks of the Russian line of advance and stop any forward movement.

"It is true, at first, the aggressive policy of Russia in the East will only threaten the kingdoms of Turkey and Persia; but as neither one nor the other, nor both combined, would be strong enough, without assistance, to meet the danger successfully, *England must do so*; and it is certain that she must, sooner or later, become engaged in a fierce contest for supremacy with Russia.

"The Euphrates valley railway becomes, therefore, a factor of inestimable importance in the problem of this great contest. Even now [1858] the construction of the line will counteract the Asiatic policy of Russia, for it will strengthen the influence of England in Central Asia, and weaken that of Russia.

"*The growth of Russia in the East threatens, though indirectly, the whole of Europe, as well as the States named above, for, if she were firmly established in Asia Minor, the real apple of discord, Constantinople, would be in imminent danger, all the commerce of the Mediterranean would fall into her hands, and she would command the canal through the Isthmus of Suez.*

"Whatever the commercial value of the canal to Central Europe, there is no doubt that it is secondary in importance to the Euphrates Valley, which affords the only means of stemming Russian advances in Central Asia, and which directly covers the Suez Canal."

The italics are ours, and introduced to strengthen our opinion that these conclusions of an eminent Continental statesman, although as true now as when formed over forty years ago, have become, by the march of events in the East, of greater European importance, and that Europe must no longer look to Britain alone to pull her chestnuts out of the fire, but must unite with her to do so.

In any general irruption of Asia into Europe the Continental Powers of Europe would be the first to suffer, and in a much greater degree than an island Power such as Great Britain.

In the Trans-Siberian Railway, Europe has an object-lesson of the commercial and military value of a through trade and strategic route in developing the resources of a country, and what it has done and is doing for Siberia, will the Turco-Persic line do for Asia Minor and Persia. It will, moreover, settle the Eastern Question by the natural way by which it alone can be settled, and strengthen Turkey by bringing the district Pashalics under the control of Constantinople.

In this connection the opinion of the greatest modern German strategist, von Moltke, is of paramount value. In 1854 he wrote:—"It seems to me that the German Powers are playing a sorry part. Evidently a new increase of Russia's power is more dangerous to them than to anyone, and yet they leave it to the Western Powers to pull the chestnuts out of the fire." The British policy has always been to hold the balance of power; to resist the aggrandisement of Russia at the expense of Turkey and Persia, and in this she has merely championed the European cause. Germany is now united, and in a position, not held by her in 1854, to take her full share of this work, for it most affects her interests. Russia's present policy is shown by her past policy, and can be seen by a reference to a map—self-abnegation on her part is not to be expected. She presses on the frontier of Eastern Europe, as much as on Britain's possessions in the East. Britain and the Central Powers of Europe are therefore natural allies for this reason alone, and France, whose true rôle is as a Western European and Mediterranean Power, is keenly sensitive to any threat against Syria, such as would result from a Russian advance southwards. The five Western European nations in co-operation must settle a balance of power in the East, without war, if possible; otherwise they must be prepared to trace it not by the pen but by the sword, if Russia and Asia are not to become synonymous terms. The sporadic efforts of individual Powers must give way to organised system, so that results may harmonise and co-ordinate.

The Northern Colossus already claims rights over Persia. Why? The opening of the Karun River to navigation was followed by an outburst of temper, and yet the Persian Gulf is an adjunct to Britain's Eastern Empire, and her undivided authority there is essential to the European commonwealth. Prior claims must not be rushed. Britain's

previous enterprise gives her an indisputable right to exercise the rule there that she has always alone exercised, and to an assurance that Persia will cede no port in the Gulf to any Power but herself. Britain's policy has been laid down to be to defend what she has already got—her prestige—and to preserve the balance of power. Why, then, should Russian enterprise aim, according to her own writers, irresponsible although they may be, at Moscovite supremacy in the Persian Gulf and Indian Ocean? A Russian Persia, whose inhabitants are Shiah Mahamadans, would be a great danger to Turkey, peopled by Sunnis. Three times as large as France, it is capable of producing anything—an invaluable possession, with a surplus revenue over expenditure, when well administered.

EUROPEAN-ASIATIC HIGHWAYS.

Considering the highways radiating from Europe as a centre, westwards, round south and east, they are :—

- I. West-south-west, to Canada and the eastern ports of the United States; across America and Canada by rail; and thence south-west and south-south-west to Australasia, China, and the Far East.
- II. South-south-west to the coast of South America and *viâ* Cape Horn to Australasia and the Far East.
- III. An intermediate line, south-west, to the West Indies, and eventually by the Panama Canal as above.
- IV. South-south-east and east to India and as above, *viâ* the Cape of Good Hope.
- V. *Viâ* the Mediterranean, the Suez Canal, and Red Sea as above.
- VI. The line as yet unopened, but of great European importance, *viâ* the Mediterranean Sea and Mesopotamia to Mosul, Baghdad and the Persian Gulf, and from Baghdad through Mid-Persia to join on with the Indian rails, extended westward to Seistan and eastward to the Yang-tse-Kiang, opposite Hankow. The necessity and importance of this route to both Europe and Asia forms the subject of this paper. Civilisation prohibits that there shall be any link wanting in this chain of communication; barbarism must give way before it and the law of progress requires that the marts of commerce shall be connected by the iron road, even though the desert stretches of the earth have to be crossed by it; it is for the good of the whole world, and international and individual jealousies must bow to the necessity, considering the present good, and not waiting for a possible future better. The security of an international route is of first importance, and each link in its chain should fulfil its purpose, and be controlled by a European nation; and this may not be too much to expect when

Europe realises that a common danger requires that she shall sink all internal jealousies to stay the progress of a Power that may become strong enough to threaten its liberties and freedom of intercourse with the East. The jealousy shown by Russia to the inauguration by one or more of the European Powers of the railways and other public works necessary for the development, and for the safeguarding and regeneration of Turkey-in-Asia and Persia, points to her entertaining hopes, the realisation of which would effectually close this European highway to Asia. Russia alone thrives on the decay of these Powers.

According to the Power or Powers with which Europe in concert may be at war, it may become necessary to concentrate in chief force on one or other, or several of them, in order that commerce may not be impeded and to enlist in their defence, not only her own flesh and blood, but that of her neighbours bound to her by community of interests.

A glance at the map of the world will show that line No. VI., the Mesopotamian line, with or without its extension through Persia, is the shortest line from Europe to the Far East. It will naturally be asked to what dangers it is exposed, and how can it be defended.

Each of these questions is considered in detail further on.

If it can be shown to be a secure line, or to be capable of being rendered secure, and, as well, capable of satisfying the requirements of European commerce, it is elevated at once to the rank of a first-class commercial highway. If, also, it can be shown to be essential to the integrity of the kingdoms of Turkey-in-Asia and Persia, and to be an absolute necessity in order to strengthen them, both materially and administratively, so as to render it possible that they should justify their very existences as units amongst the civilised nations now closing in on them, this commercial highway becomes a European strategic one of the very greatest importance, and one the development of which should not be delayed.

In the East the mind moves leisurely, and the development of a country by opening up communications is slower than in the West. Time presses, and valuable years have already been lost. Fruit cannot be plucked from a seedling, nor can results be drawn from an undeveloped country under many years of growth.

As far back as 1871-72 a Select Committee of the House of Commons reported on the various highways leading across Mesopotamia from the Mediterranean Sea to the Persian Gulf, and, from the evidence taken, satisfied themselves that there is no insuperable obstacle in the way of the construction of a railway between the above seas; that there is more than one port that might be selected at either end of the line; that there are several practical routes; that there will be no difficulty in procuring the necessary supply of labour and materials for constructing a railway; and that there need be no apprehension of its being exposed to injury by natives, either during the progress of its construction, or after it shall have been completed.

After discussing the various routes *viâ* the Euphrates and the Tigris, and the relative advantages of the various termini, they reported that "if the co-operation of the Turkish Government is to be sought in the construction of a railway, it may well happen that that Government may see reason to prefer the route by way of the Tigris; and any such preference ought to be a material element in the determination of the question" (see page 1001).

Time was ripe for the work half a century ago, and there is such a thing as over-ripeness and its resulting decay and rottenness: cankers of various natures eat into the hearts of nations as well as into that of fruits, and not the least insidious are the unseen—intrigue, discontent, disloyalty, until finally corruption alone remains, and its generator becomes its natural possessor. The consequences to Europe if supineness still prevents action will be great and lasting, for where she will have feared to tread others will have walked fearlessly.

The Mesopotamian highways, when viewed in the light of their necessity to the improvement of Asia Minor, are European highways, and should in consequence be constructed by European capital and worked by international departments, all nations being allowed to participate equally in their commercial advantages.

This Turkish route (VI.), together with (I.) the American and Canadian routes, represent a body with outstretched arms, and constitute a girdle round the earth, strongly supported at short intervals by the vast continents of America and Canada, Turkey-in-Asia, Persia, India, and Australasia, and the European possessions in the East and Mediterranean Sea. Of these main supports, Turkey-in-Asia and Persia alone are not bound to Europe by ties of blood; but their common interests are great; and should they not at first act in conformity with them, still, when the worst comes, and misfortunes cause them clearly to discern them and to distinguish friends from foes, the instincts of self-preservation may cause to be placed in her hands the belt of country necessary for her to control to secure to Turkey and Persia a remnant of empire (see page 996), so that to prepare it during peace to meet the needs of war is no labour lost; inasmuch, however, as it does not admit of through ship communication along it, but necessitates a break of bulk, it can, to the maritime nations, be only regarded as an auxiliary to the ocean lines (II.) and (IV.), the true channels for bulky and heavy goods. Neither arm is dependent on the other for its safety.

Routes (III.) and (IV.) *viâ* the Suez and Panama Canals, passing through canals which can be readily blocked and only with difficulty and time repaired, if damaged, are most insecure. A railway break is quickly repaired; a canal obstruction is only removed with time. Each supporting point on the combined routes (I.) and (VI.) is capable of protecting the land line across it, and in a lesser degree those leading to and from it, except the youngest in point of age, the growing European colonies and possessions in the East, and statistics show that in twenty years' time their development will be such that they too will be a source of strength; their present strength lies in their remote situation and distance from

centres of strife; in the meantime each nationality must defend her own, and this can best be done by removing to a distance of time all possibility of a serious attack being made upon them. The one immediate, great, and increasing danger threatening European empire in the East and in the Chinese Seas is the southern expansion of Russia and her near approach to the shores of the Mediterranean Sea, Persian Gulf, and Japanese and Chinese Seas (see page 987). Another danger is the jealousies of the European Powers in the East—jealousies that must be set aside to meet a common danger and commercial need.

PROBLEM TO BE SOLVED.

The problem before us may then be stated to be :—

- i. How best to strengthen Turkey-in-Asia and Persia so as to justify the aid given to enable them to continue units amongst nations.
- ii. How best to aid these so-called Powers to defend themselves, and in defending themselves to defend European interests, so that it may be impossible for Russia to absorb them and by so doing to become possessed of a line of communication of paramount European importance, and of seas and countries, which would place her in a position to dispute with Europe, with every chance of success, the Empire of the East, and eventually with the aid of a million Turks, to rule rough-shod over Europe itself.

Russia with youthful energy and great forethought and fertility of resource is leading the world; she leads enterprise and is running her rails longitudinally through Asia, and under her own guarding, from Moscow to the Chinese Seas, and from Batoum through Trans-Caspia, to the Kuldja gate of China, and is gaining inestimable advantages from her magnificent enterprise. She is gradually pushing her feeder lines southward into Europe's sphere of influence to gain a predominating influence in Turkey and Persia as well as in China, and to Charjui and Tashkent to put an end to the inconvenience of the trans-shipment across the Caspian, and Europe can no longer stagnate, and rely upon her shortest line—the Suez Canal—to Asia, and along which now all nations run lines of steamers to India and the Far East and Australasia. She now requires three commercial lines to the East, *i.e.*, *viâ* the long-sea routes, the Suez Canal, and by rail across Mesopotamia; no line through Russia could possibly serve Europe's purpose. She must now enter into a keener competition for the trade of Asia, a railway competition with Russia, and inaugurate a quicker route than any she as yet possesses by running her rails across Mesopotamia, *viâ* Mosul and Baghdad, to Kawait or Grain on the Persian Gulf, and across Persia to the gates of India, *viâ* Karmanshah, Ispahan, Yazd, Kirman, and Seistan. Its Persian terminus, Seistan, is a fertile oasis, capable of great expansion, and a centre of trade routes between Persia and India, the Caspian and the Persian Gulf. Commerce and strategy adhere to natural directions, and this line is as necessary to her commercial as her political requirements.

As natural and scientific appliances and applications improve old means must give way to new, and this old caravan route, from the "Great Sea" to the Bolan, must give way to a railway route; and the old classical lands of the Chaldeans, the Medes, and the Persians; of Nineveh, Baghdad, Ecbatana, Persepolis, etc., must be revived, and the old unrivalled seats of empire must again arise, under European auspices, from their ashes. The country tapped by this line is eminently fertile, and favoured with climatic influences of a most favourable character, a plentiful rainfall, and a hot sun, suited to the growth of the grape, the fig, and the olive, as well as of cereals, cotton, etc.

It is populated by generally industrious and hardy races of Turks, Persians, Armenians, Nestorians, Kurds, Arabs, etc., agriculturists and herdsmen. This true overland route in its entirety is a work fit for the giant powers of Europe, and yet will leave scope in the future for the construction of the shortest line *viâ* Balus, advocated by Sir W. Andrews, and from Port Said to Nedjef. It is the only way of entering into a friendly competition with Russia for the overland trade of the East, and any unfriendly competition or opposition is a contingency that has to be provided for only. Europe's rivalry with Russia is as much commercial as military, for the latter aims at becoming the chief supplier to the East as well as carrier between the East and West; to compete by railways with Europe's mercantile marine.

NECESSITY OF STRENGTHENING OUR EASTERN NEIGHBOURS BY ADMINISTRATION AND CONSTRUCTION OF PUBLIC WORKS.

How to check, then, this advance economically by peaceful and bloodless means (see page 995), and, should they fail, by force of arms, are here considered. Whether conviction will result in action is another matter. Volumes have without result been written to prove what is self-evident to all acquainted with the East. It seems that nothing but an immediate danger will cause the initiation of preventive means. The Christian nations are but selfish peoples hoarding accumulated wealth, and refusing to spend it on either insurance or philanthropy. The millions that would benefit by its wealth, laid up in a napkin, if it were but instead laid out remuneratively in communications necessary to its own commercial requirements, and maybe even existence, are not considered. Notwithstanding that every pound so laid out would produce ten pounds, the nations act as did the over-cautious servant, and they will receive the same reward. A political earthquake will, it is sincerely hoped, arouse Europe to her duty, and teach her who her neighbours are. They are they whose fortunes are bound up with hers by the links of geographical position and its enforced common interests—links that none can un rivet, and designed to draw together nationalities, and requiring of each that self-sacrifice necessary to every bond of union.

A present sacrifice of means, energy, and talents is required of Europe, to construct communications and public works in Turkey-in-Asia and Persia for their advancement and her own gain; thus leavening them and leading by their means to a knowledge of just

dealings; strengthening them by the development of their vast latent mineral and agricultural resources; in a few words, treating them as weaker neighbours. They on their part must gradually sacrifice, to entitle them to exist as nations, Oriental pride, apathy, rapine, and unjust dealings, and allow themselves to be guided by the stronger will. No one unacquainted with the East knows how soon and readily the Eastern will bend to the Western, and is benefited for good by it.

Let Europe take warning from the result of Britain's treatment of one of her neighbours, Afghanistan. She has been her acknowledged Mentor since the time of Dost Mahamad, and well has she acted the part of her evil genius. She participated in the bloodshed caused by the rivalry of the Barakzai Sirdars by neglecting to step in and forbid and prevent it. There are men who have a voice in the councils of the nation who still advocate that we allow the Afghans to stew in their own juice—surely a most impossible and reprehensible policy, and sometime known as "masterly inactivity."

India now smarts for thus having refused to be her brother's keeper. Had she not neglected this duty the sweet fruits of rule and peace of mind would now be falling into her lap. She did well till within sixty odd years and prospered; but then timid councils prevailed: she neglected her civilising mission, and it is full time that she resumed it.

See what methods of overcaution and unneighbourliness led to. They led into deep errors; amongst others, into believing that the Suleiman range was an impenetrable wall of hills, and the Hindu Kush a most formidable barrier; they led into considering the heterogeneous Afghan nation to be uncontrollable. In former days India sent emissaries under small escorts into the Hazarajat, Bukhara, etc. Methods of non-intercourse and non-intervention can have no other reason assigned to them by an Oriental than one of fear; they have gathered from them that India considers them redoubtable foes, to be dreaded, and now they despise her and boycott her, in proportion as she gives way to their will in perpetuating a state of things that she herself inaugurated.

Again, when Britain became responsible for reform in Asiatic Turkey, a few consuls watched the progress of reform; scattered at wide distances, they protected Christians, and did much good in the cause of justice: what good they did shows what it was possible to effect; but in what was really wanted to develop the resources of the country, in constructing communications, renovating harbours and canals, she attempted nothing. She had her opportunity and neglected to use it.

Private Companies or International-Turko Customs and Public Works (Railways, Roads, and Canals), Departments, recruited in Europe and Turkey, would resuscitate Turkey's finance and develop its latent wealth, if the latter department be allowed to lay out fifty millions (see page 1007). Without this help Turkey-in-Asia must decay till she rots to pieces and becomes absorbed by others, and present endeavours to aid her must be considered to be a mere mockery. Europe has lent Russia money to construct com-

munications, whereby she has placed her in a position to injure herself. Let her now lend herself a little to be laid out in Turkey and Persia, etc., to be administered by herself, and not as heretofore by venal pashas, to counteract the harm she has done, in order to construct counter-communications. As above recommended, let Europe exact her full bond by spending it, administering it principally by her own sons, and drawing from it a dividend of three to five per cent., or more as earned.

The foregoing considerations are no mere denizens of a fantastic world, having a phantom existence, nor are they caused by dazzling dreams of empire; they are founded on rocks of truths and not on the quicksands of fanciful opinion; they are the outcome of the toil of study and hard travel.

Whether war on the Eastern Question will be forced within the next few years altogether depends to what account Europe turns them; war is only averted by the desire which instigates it being rendered unattainable. Treaties are for the weak only in the opinion of the imperious strong.

By turning the present to good account, by investing accumulated wealth in works of insurance, in railways, harbours, and canals in Persia and Turkey-in-Asia, and in encouraging a just administration, war will be at first postponed, and eventually rendered impossible by the removal of all pretext for interference, and Europe will have gained her ends by a bloodless victory in a manner calculated to bring prosperity and happiness to millions, and credit and profit to herself.

It is to be remembered that, in encouraging a just administration and developing commerce, we have the bulk of the people with us. The Governments of the States concerned will reap such substantial advantages, that they too, after a time, will be in our favour; the middlemen, governors, and petty rulers, who alone benefit at present, will be against us.

It may or may not be malevolence on the part of Russia that causes her to absorb all Oriental peoples with whom she comes in contact. She gives them the diluted civilisation, suited to their needs, and has done her civilising part well enough to make her welcome as a deliverer to the subject races of Afghanistan, Persia, and Turkey-in-Asia. Her advantage lies in that none of these nationalities are homogeneous. Afghanistan has her Hazaras, Turkomans, Aimaks, Heratis, etc., longing to welcome the deliverer; Persia has her Kurds, Lurs, Arabs, etc.; Turkey-in-Asia has her Armenians, Kurds, Arabs, etc.—all, except those who live by rapine, discontented with present rule, all desirous of no matter what change so long as it offers a promise of better things.

It therefore behoves Europe to beware how she neglects the rôle she has been elected to play in the world's history: her spiritual inheritance—to withdraw her hand from the task will be to give it over to others as distasteful to her, and her lot will be to decay as surely as have died the nations who have before her educated the world so soon as their desire for peace and quiet, ease and luxury, overruled all other desires and led to weariness of the task. Material wealth and commercial greatness can, unfortunately, only be kept by fostering the military spirit required to protect them. A present forethought alone will obviate a future stagnation and decline.

By means of the strengthening influence described, the kingdoms of Turkey and Persia can be resuscitated, and they are the only means of raising them in the scale of nations, and making them law-abiding and commercial peoples. They are natural means, and therefore the best.

European law and security must be introduced where life has been degraded by their want, and this is Europe's duty within her sphere of influence; to fulfil the law of empire, by serving her weaker neighbours, the European nations must distribute amongst themselves this duty and give to each of them that free scope of action necessary to the exercise of their best faculties and the security necessary to prosperity.

Such works have ever been well received by those of our merchants who have understood their commercial importance; it is time now that diplomatists and soldiers should throw their weight into the scale.

This diatribe may be considered to be out of place, to be somewhat of a jeremiade—to partake of the nature of cant and the ravings of a theorist and unnecessary; but is not so. History teaches otherwise; it is all-important, for Europe has not yet as a unity awakened to the sense of her danger and responsibilities in the East and the ways in which it may re-act upon herself and to the necessity of extending her Eastern administration and responsibilities so as to include more fully the nationalities lying between the borders of India and the Mediterranean Sea, and thus to meet the requirements of the advance of years.

It would be a good thing if some of her statesmen were to assume the rôle of political Jeremiahs and preach to the people concerning the events that may happen upon the earth in their age, and which will overwhelm them in its tide if it be not stemmed in time. Public opinion requires to be educated on the Eastern Question and menace, for if a policy is to succeed there must be a national feeling behind it.

REQUIREMENTS OF A HIGHWAY.

A line of communication has a twofold aim—a commercial as well as a military one: the latter, to enable military forces to occupy strategical vantage points from whence to prosecute a campaign with foregone chances of success; the former, so to run the line in subordination to the military aim that it shall tap the richest producing country, *i.e.*, producing wood, grains, cattle, fodder, etc., and the luxuries of life, *i.e.*, butter, cheese, milk, fruits, tobacco, etc. These two aims are always attainable together, for both military and commercial success depend upon communications and centres of supply and organisation, and commerce has been instrumental in forming these. The best commercial highway is the best strategical line as a rule.

In such still primitive countries as Persia and Turkey-in-Asia, roads are very much in the same condition as that in which the Flood left them, so far as man's exertions to improve them are concerned. Their alignment has been the result of the majority taking the easiest and best road, and those indicated by the natural topographical features of the country. Time has constituted these into highways, and their improvement has been due to the traffic of ages, which will wear its way into solid rock.

MESOPOTAMIAN HIGHWAYS.

Our first aim, therefore, in selecting a European strategic and commercial communication to run through Turkey-in-Asia and Persia, to eventually traverse mid-Asia is (I.) to determine the military points of advantage necessary to occupy for both attack and defence; (II.) to align it so as to pass, at a safe distance from the frontier, through or near them, and centres of supply, the richest pastures, the most wooded hills, luxuriant cornfields, etc.; and finally (III.), to arrange for its subsidiary supply, lines both to the front and rear, so as to strengthen vulnerable points and give easy access to places of military and commercial importance.

Besides the construction of the grand trunk highway, which will take the form of a railway, much has to be done in the way of improving feeding waterways and roads, and harbours, and no time is to be lost in their initiation.

To put off sowing the seed of prosperity and reform under the idea that when necessary we can plant the grown tree and at once reap its fruit, is a policy that will not bear investigation (see page 992).

All are military requirements of defence as well as commercial public works of a highly remunerative nature, so on no higher grounds than those of self-interest they should be undertaken and secured by inter-government treaty.

At present the great natural highway from Europe to Asia through Mesopotamia lies untrodden. It is becoming daily of increasing political and commercial importance to Europe.

The strides made by commerce within the last thirty years necessitate, as already pointed out, that the Suez Canal route between the West and East should be supplemented by a shorter and more rapid one, to be provided only by a land route (railway) connecting the Mediterranean Sea and the Persian Gulf, and eventually the Great River, the Euphrates, with the Indus, the Irrawaddy, and the Yang-tse-Kiang. The Committee already referred to reported in these words (1871-72):—

“Speaking generally, your Committee are of opinion that the two routes, by the Red Sea and the Persian Gulf, might be maintained and used simultaneously; that, at certain seasons and for certain purposes the advantage would lie with the one, and at other seasons and for other purposes it would lie with the other; but it may fairly be expected that in the process of time traffic enough for the support of both would develop itself, but that this result must not be expected too soon; that the political and commercial advantages of establishing a second route would at any time be considerable, and might, under possible circumstances, be exceedingly great; and that it would be worth the while of the English Government to make an effort to secure them, considering the moderate pecuniary risk that they would incur.”

To connect the Mediterranean Sea with the Persian Gulf, three chief railroad projects have been proposed:—

I.—General Chesney's project, known as the Euphrates Valley scheme, and advocated by Sir W. P. Andrews as a sound commercial

enterprise. The practicability of this scheme is undoubted. Starting from Suedia the line would be carried up the Orontes Valley and *viâ* Aleppo to Ja'ber Castle on the Euphrates, thence through the El Jazirah to Baghdad on the Tigris and Kurna at the confluence of the Tigris and Euphrates. Below Ja'ber Castle the Euphrates is navigable to its mouth by light-draught steamers (two feet to three feet) of high horse-power, steaming twelve to fifteen knots. The culturable area that this line taps is very large; and population, irrigation, good government, and an outlet for its produce, such as that offered by the railway, are alone required to transform it into a vast grain-growing and grazing country.

To gain the advantages of sea termini, another proposal is to run this line from Alexandretta *viâ* Aleppo to Balus, and thence by Hit to Grain (nine hundred miles). The scheme of Baron Rechnitzer is to run the line *viâ* Deir, Baghdad, Kut-ul-Almeira, Kourma to Basra, with branches to Kerbela and Nedjef. From Alexandretta it would reach Koniah *viâ* Adana (see pages 994, 1010).

Strategically, it is important as the shortest through line to India, and from its giving communication in the direction of Diarbekir to Ja'ber Castle. The line is estimated to cost ten millions sterling on the broad, and five millions on the narrow gauge.

Both strategically and commercially it seems to be defective as a trunk line of railway; no near access is given by it to the important centres of Diarbekir and Mosul and the rich districts and mining wealth lying south and north of the line Urfa, Diarbekir, and Mosul, and those to the east of the Tigris are untouched by it.

It is well here to remark upon the fallacy of the generally conceived notions that no exports of wheat or other grains means no growth of them, and that poverty of population argues a poor and impoverished soil.

These two matters are so closely allied, that they are considered together.

Growth of grain depends upon population, soil, and irrigation. The valleys of the Euphrates, Tigris, Karun, and Hindiyan, etc., are amongst the richest alluvial valleys in the world: where corn and barley are grown, they rival our English grains. If one-half of Mesopotamia were put under cultivation, it is calculated that it would yield grain equal to the produce of the whole of France; and that, in the early spring, it could be sold in London at a cheaper rate than that brought from Odessa. But insecurity of life and property have caused the canals to become dry and the ground to be tilled but here and there by a few wandering tribes. Good government would change this unsatisfactory state of things as if by a magic wand.

Fertility of soil is therefore no criterion of the amount of grain grown; it renders the growth possible only. No grain can be exported without communications, and no man will grow more than absolute want compels him to do, unless he is guaranteed the ownership of the surplus after paying a moderate portion of it as a tax. Without communications the bountiful yield of the soil supplies its fortunate cultivator with food

at a nominal cost ; but he remains poor and ill-clad, being unable to barter his wealth by carrying it to markets where it is required.

The area cultivated therefore depends upon the security as to ownership of the surplus cultivated and upon the means of transporting it. The simple fact of opening up communications enables a large additional population to be fed by rendering available the surplus grain of fertile localities which otherwise would go to waste.

To be ill-clad and fed is of comparatively little consequence in the tropics ; but in Persia and Turkey-in-Asia it means numerous early deaths and the survival of the strongest only.

Other causes of national poverty and paucity of population are bad government and want of capital ; public works, roads, and bridges fall into ruins.

Canals cease to carry water, famines result ; sanitation is neglected, pestilences follow. These two causes carry off thousands of people, whose lives are sacrifices to Sultans, Pashas, Shahs, and Khans and their satellites.

Bad government leads to oppression, and oppression to emigration, neglect, and repression of cultivation. If a crop of corn or fruit or wool is large, the prince not only takes the lion's share. but requires the young men and transport of the village to carry it to his headquarters ; as a natural consequence but enough for the wants of the community is grown, and the fruit trees are cut down as a source of loss, and the cultivators are the gainers. The Khan takes a fancy to his retainer's colt, and it becomes his ; naturally, horse-breeding operations do not prosper ; a man makes a fortune, not to enjoy it, but to hide his wealth, lest he be summoned to Tehran, Ispahan, or Constantinople to be "squeezed."

The remedy that lies in the hands of the peasants is to complain continuously and loudly against the oppression of the farmer of the revenue until he, in his turn, is ousted. Naturally he will stop his exactions just short, to him, of this undesirable result.

These are no fancy tales ; they are facts. The nomad life is not preferred except by the lawless few ; it is a necessity to enable the tax-gatherer to be more readily eluded ; fear of extortion and ruin prevents the peasants settling in villages. Reclamation from a nomadic to a village life would lead at once to the security of the roads, the settlement of the country, and the increase of trade. Poverty also keeps a man single, and in Asia Minor and Persia people are all too few, and it is well understood in the East that population is necessary to the wealth and strength of a country.

Change the causes of poverty and depopulation, causes inseparable from an Oriental despotism, and the results are changed ; increase of all kinds of produce and of population will result ; famines will be less frequent and pestilences more under control.

The Sikh despotism in the Panjab was a mild one compared to those of Afghanistan, Persia, and Turkey-in-Asia. Since its cessation the increase of produce, of population, and material wealth has been considerable.

It rests with man, by the evil that lies in the lawless and unrestrained few, to make of a fertile soil an abomination of desolation or by the good that lies in the peace-loving many to create of it a garden.

When the world was young the valleys of the Tigris, Euphrates, and Karun Rivers were thickly populated and richly cultivated; it is a blot on modern civilisation that they are to-day practically depopulated wastes. The climate is more bearable than that of India, less heat and more cold, so well suited to an Indian constitution, that colonies of Indians could be planted there to the benefit of the race and the relief of many over-populated districts.

REVERTING TO RAILWAY PROSPECTS.

II.—A more perfect line than that just described (I.), proposed by Mr. Latham and others, takes Alexandretta as a starting-point, and runs *viâ* the Beilan Pass, Antioch, and Aleppo to Birejik on the Euphrates, and thence through Northern Mesopotamia, past Urfa, Mardin, Jazirah, and Mosul to Baghdad, thus gaining at the cost of an increase in length of two hundred miles great commercial and strategic advantages; the centres of commercial and mineral wealth are tapped; it crosses the two main waterways of the country, the Euphrates and Tigris, at points to which they can be navigated; it develops a greater area of alluvial soil, and, as well, passes through the great strategic centres necessary to the defence of the country. This is the line justly favoured by the Turkish Government (see page 992).

In a military sense it is based on both the Mediterranean Sea and the Persian Gulf, on Europe and on India, Britain's dependency. To increase its strategic and commercial value a Black Sea base and outlet are required.

This is afforded by the line proposed by Sir M. Stephenson and the Stafford House Committee, running from Mardin *viâ* Diarbekir, Malatia, Sivas, and Tokat to Samsun. This line is essentially a defensive one. Offensive branches are required as below :—

- i. Sivas, Erzingham, Erzerum.
- ii. Kharput, Mush, Bitlis, Van, Kotour.

The main Mediterranean-Baghdad trunk line would cost to construct about thirteen millions. The line leading to the Black Sea from Mardin and the Van and Erzerum branches would cost £12,000 to £15,000 per mile (see page 993).

III.—For both strategic and commercial reasons a Central Persian line is required, with Ispahan as an objective, and thence *viâ* Yezd and Kirman to Seistan. This line best takes off from the Mosul-Baghdad line at the most convenient point from whence to cross the Zagros range, so as to reach Kirmanshah and Burujird (see pages 993 and 1010).

The Aleppo province has a trade of about two and a quarter million pounds sterling per annum.

The population of Diarbekir is 40,000 (formerly 150,000); of Mosul (ancient Nineveh) 40,000; of Kharput 11,000; of Sivas 35,000, and of the Province 1,500,000; of Erzerum 40,000; of Bitlis 40,000; of Tocat

30,000; of Mush 15,000; of Van 30,000; of Homs 30,000; of Mardin 25,000; of Urfa 40,000; of Kirmanshah 30,000; Hamadan 30,000; Ispahan 60,000; Kirman and Yazd 40,000 each, etc.

The construction of this system of railways, the practicability of which is undoubted, would raise these towns into emporia of first-class importance, and by sympathy with them its influence would extend more or less to all others, even to the shores of the four seas.

Too much through traffic must not at first be expected on these lines. Local traffic will gradually develop and become great. Their chief value will be strategical and political, and in developing latent resources both agricultural and mineral. We are apt to look for too much at one time and to combine all advantages at all times, whereas we must be content to take each advantage in its due season.

A trunk line to India through Tehran and Mashhad is quite out of the question, as it would be completely under northern influence; it must be commanded from the Persian Gulf (see page 1012).

To explain the importance of the above lines to the well-being and defence of Turkey-in-Asia and Persia, let us consider how these countries can be defended most readily and with the least expenditure of means.

First, consider the case of Turkey-in-Asia.

Russia, her natural enemy, is strong in the country bordering the Black Sea and the Caucasus; she is quick to strike and to take every advance of her apathetic enemy. This she did in 1877, and may be expected to do again.

Her aim will be a decisive result, and a rapid and thorough overwhelming of the Turkish Army, for with it will fall Turkish dominion in Asia. Turkey is comparatively weak in the eastern parts of her Empire, adjoining Russia, and slow of action.

Russia, when she desires to pounce upon her prey, may be therefore assumed to mass her forces about Olti, Kars, and Erivan, and to be ready to descend by land and sea on Erzerum, Van, Trebizond, and Samsun.

If a naval and military Power or Powers be allied with the Turks, it will be necessary for them to command the sea and to aid to prevent the descent by land. This they can conveniently do by advancing direct from Trebizond on Erzerum, and by taking up positions along the line Samsun, Tokat, Sivas, Malatia, Diarbekir, and advancing directly by prepared roads or railroads from Sivas on Erzerum and from Malatia on Van. For the rapid success of these movements railroads are essential; no modern armies can operate with rapidity without them; they multiply men and means, and save life and money by prohibiting protracted operations and leading to decisive results.

Should the slow mobilisation of the Turks, want of military roads, backwardness of her allies, etc., so favour Russia that she capture Erzerum (at once the capital and key of Armenia) and Van, or invest and pass beyond them, her endeavour will be to occupy the fertile plains and valleys extending southwards to the Armenian Taurus or Kurdistan range of mountains, *i.e.*, to Mush, Khanus, Bitlis, etc., and westwards, to the neighbourhood of Erzingham and to hold the eastern outlets of the

roads leading through the hills stretching from Erzingham in a south-east direction to the south of lakes Van and Urmiah, *viâ* Hamadan to Shiraz (the Zagros), which outlets it may be confidently assumed will be then fortified and held in force. Under the most favourable circumstances, Russia cannot hope for more than this, and here at least let us hope the defenders will bar all further progress by the occupation of the hill passes and such points as supports to them as Erzingham, Palu, Hasu, Hazru, Sart, Khizan, Bash Kal'a, etc., effectually hindering all advance on the main strategical points of Mosul, Diarbekir, Kharput, and Sivas.

To these points should gravitate the *Western allies*, troops, stores, and transport, etc., required to the front.

To the west of the border the Russians would have roads only to operate by: these being indifferent and few, the numbers that can advance by them will be restricted. Time will be of the utmost importance, so that the initiative may be taken before the enemy shall have had time to mass in numbers, and to fortify himself in the natural fortress of Armenia, and before Erzerum, if it hold out, shall have fallen. To enlist time on the side of the defence, as already stated, railways are required.

Judging from results, Turkish forts and entrenchments are not impregnable to Russian troops, and fall when scientifically assaulted with less than double numbers in a few weeks or even days.

An Oriental work is never perfect. It is certain to fail in some essential defensive requirement, which a wary foe is not slow to turn to good effect.

A well-concerted forward movement from the directions of Trebizond, Erzingham, Bitlis, and Van should carry the initiative by Olti, Zewin, and Alishgird into the enemy's country, for the strategic advantages of the defence are considerable; flanks secure, resting on the sea and the Armenian Taurus; the right wing, in the firm occupation of most difficult mountains, their outlets and their exits, an advance can be made at will on the enemy's communications, or a pure defensive may be maintained with inferior forces, whilst the bulk of the army pushes everything before it, and advances to and over the border, and, aided by a descent on the coast, carry war into the heart of the disaffected Caucasus, Russia's most vulnerable point, and where a reverse, if followed up, must lead to a retirement out of Turkestan.

The defensive zone, to the south-west of Van, so threatens the communications of an enemy advancing from the Caucasus on both Erzerum and Van, that it must of necessity be attacked in force or watched by a large force.

A descent on the coast, unless made in great force, cannot be said to threaten a Russian advance on Erzerum, as it would probably be itself besieged; it is when the initiative is taken, and an advance in force made towards Kars, that its value will be felt.

In such a plan of campaign, Turkey being aided by a European naval and military Power or Powers, a Persian column would play a most important part.

Such a force based upon the area Karmanshah, Sahna, Burujird, Hamadan, and advancing in the direction of Tabriz and Rasht, would completely prevent any Russian attempt to force the mountain roads south-east of Van, for it covers all their mouths, and, if necessary, can aid in the defence of Tehran.

Such a column would be based on the Tigris and Persian Gulf, Baghdad, and Muhammerah, by lines of communications (III., page 1001), already referred to, and the Karun (see page 1005).

It is also capable of advancing into the Caucasus and of co-operating with the main advance from Erzerum.

This Persian column is only necessary should Russia violate Persian territory and operate from Khoi, Tabriz, Souj-boulak, or Sahna through the Kurdistan hills. Such operations it completely takes in flank; its own flank is only threatened from the direction of Rasht and Tehran—a threat which can be readily met by any reserve force occupying the quadrilateral base above mentioned.

If Persia is maintained neutral, and she herself is neutral, this column, composed of Eastern allies, could co-operate with the Turks and her Western allies in the general direction of Mosul, Van, Bayazid.

The above sketch of a plan of operations, having for its object the defence of Turkey-in-Asia against Russia, goes to show that the strategic lines of communication already considered, from the Black Sea (Samsun), the Mediterranean (Sakandarun, Suedia, or Tripoli) and the Persian Gulf (Baghdad on the Tigris), assures it being effectually carried out. They are therefore of pre-eminent European importance.

These lines lie wholly within Turkish territory, and are necessary for her commercial development.

The question has been considered on its broad principles alone, and main points only have been mentioned; in each case, details have not been overlooked: to state them, however, would be but to confuse the subject and weary the reader.

The number of troops required for such a campaign must naturally depend much on the nature of the theatre of war, which is hilly and traversed by few good communications. They may be estimated somewhat as below:—

Line—Trebizond-Erzerum	..	..	50,000
Line—Sivas-Erzingham	..	..	25,000
Line—Kharput-Van	..	..	50,000
Line—Diarbekir-Bitlis	..	..	25,000
Line—Mosul-Van	..	..	25,000
Line—Baghdad-Hamadan	..	..	50,000
Holding the Kurd hills	..	..	25,000
Threatening a descent on the coast,			
Batoum to Yenakali	..	..	50,000 (minimum)
Total	..	..	300,000

Such a force, so placed for mutual support, should render it impossible for superior numbers to cross the border, and would be in a position to take the initiative with 200,000 troops, and as many more as the country and its allies could afford to place in the field over 300,000 men.

The defence of Turkey-in-Asia is the defence of the world's commercial highway to the East, and of Europe's strategic road across Mesopotamia and by the Persian Gulf, and eventually of Europe herself, which, if in the hands of a Power stretching from the North Sea to the Persian Gulf, would place her in serious jeopardy and compel her to keep up ruinous war establishments still more numerous than at present.

The part that a minimum force landed on the coast about Batoum, so as to outflank a Russian advance, or further north, about Yenakali, to cut her communications, is no unimportant one if it take up a strong position securely based on the sea and entrench itself until it can advance to aid in raising the disaffected Caucasus.

To render effectual the co-operation of a force from the area Karmanshah, Sahna, Burujird, Hamadan, the inauguration of communications as below is required, viz. :—

- i. The extension of the Mesopotamian Railway through the Zagros Gates to Karmanshah and Burujird.
- ii. The opening of the navigation of the Karun River to Shustar; the construction thence of a line of railway, forty-five miles in length, to the foot of the hills, north of Dizful, and of a cartroad over the Chul and Dalich passes, *via* Khoramabad to both Karmanshah and Burujird.
- iii. Although it may be impossible to bring Karmanshah into navigable communication with the Gulf by the rivers Karasu, Kharkhah, and Karun, yet it ought to be no difficult task to make this line of water communication suitable to rafts by improving the worst parts of its course, and to thus facilitate the evacuation of the army.
- iv. The prolongation of the line of rails from Burujird to Ispahan, the capital of South Persia, and the centre of an agricultural and pastoral district, presents no difficulties, and follows as a matter of course. Nor does this line offer great difficulties between Burujird and Khoramabad and between the western foot of the Zagros range and Baghdad; the passage of the Zagros to reach the hilly plateau of Mid Persia (5,600 to 8,000 feet), a line of steep gradients and sharp curves, is a difficult engineering work.

Notwithstanding the difficulties of this section, and the fact that the Mid Persian plateau has in winter a severe climate, this line, the direction of which is imposed by strategic necessities, is also the best commercial line; no other line would so directly tap such fertile districts, *i.e.*, those of Karmanshah, Hamadan, Burujird, Gulpaigan, Khonsar, Ispahan, etc., and those to their northward, nor draw towards it so effectually the products of North and South Persia—opium, wool, corn, barley, carpets, ghi, etc. (see page 997).

Between Ispahan and Seistan, the connecting link to make complete the overland rail route, the country presents no great engineering difficulties; the line passes through the fertile districts and towns of Yazd, Karman, etc., and follows the route taken by caravans.

The Central Persian route is considered to be both commercially and strategically superior to others put forward as feasible, viz., that from Baghdad, *viâ* Shustar and Shiraz to Kirman and Seistan, keeping to the south of the Zagros range and its south-east continuations, the Bakhtiari hills, and that from Baghdad *viâ* Basra and Bushire and the shores of the Gulf. The latter line would meet with considerable difficulties from streams, floods, etc., would develop no traffic beyond that of the narrow strip of land between the Gulf and the barren, difficult hills to its immediate north, and would carry only what filtrates through them into Muhammerah, Bushire, Bandar Abbas, etc.

The line, *viâ* Shustar, Behbahan, and Shiraz, although cheaper to construct than that *viâ* Karmanshah and Burujird, is also defective as a trunk line; it would develop less country and take less traffic. Both are defective strategically; not leading to any important military positions; not lessening the difficulties of advancing into the country; not aiding in provisioning and supplying the troops so advancing to any sufficient extent; the coast line is indeed both commercially and strategically useless, and the Shustar-Shiraz line but a slight improvement upon it. A line to pay commercially and to be of military value should run to the north of the Zagros range and its south-east Bakhtiari continuations, so that it may tap the rich valleys found there, and that traffic may flow into it from either hand; it should, as the Baghdad, Karmanshah, Burujird, Ispahan line does, go direct to the sources of wealth, and put the hills difficult to traverse to its south. The iron road must overcome the difficulties of the passage of the Zagros, which occur everywhere between Karmanshah and Ispahan, and which the transport of the country wears itself to death in overcoming, and at the same time it must form the necessary secondary base, to the Persian Gulf and the Tigris as a first base, the breathing stage, for operations towards the Caucasus and the Caspian.

That a correct choice should be made of the best commercial and strategic line between the Mediterranean Sea and India, so as to answer all the requirements of commerce, of defence and offence, is of the highest importance. A wrong choice cannot be rectified except by costly expedients, and may cripple military action or render it wholly abortive; a strong line as to defence, well selected as to the offensive, must compel the enemy's movements to conform to your initiative. All the advantages are gained of a pre-arranged campaign on a definite plan. The best strategic lines of communication, even if the longest, will generally run through the most important provinces and the most flourishing towns; main communications and not bye-ways are most appropriately used for strategic purposes, and these are the arteries of commerce.

The large towns of a district give the greatest assistance to an army; shelter for troops, safe storage for provisions and war materials; their

civil workshops and tradesmen, etc., are of value, military establishments of many sorts are to be found in them; they are in fact essential to the organisation, administration, and maintenance of an army.

Military bases depend for their fitness upon sources of supply and refitment, fortresses for munitions of war, open towns for storage of provisions.

All the above considerations were carefully weighed before the overland railway to Asia now put forward as the most desirable and safe one, and one answering the purposes that it is required to fulfil, was finally decided upon; upon the manner in which it meets the requirements of a good line of direct commercial communication and of a secondary base in a military sense to the Black and Mediterranean Seas and Persian Gulf, as primary bases, its merit must be decided; the best base and line of communication combined will also be the best commercial line.

The defence of this line is the defence of both Turkey-in-Asia and Persia (see page 1010).

Taking the line as a whole from Baghdad to Nushki, where it would join on to the Indian lines, its length would be, roughly, seventeen hundred miles, and its cost twenty millions of pounds sterling.

The length of the Turkish lines would be, roughly, sixteen hundred miles, including the Erzerum and Van branches, and the cost another twenty millions. Thus, for the moderate capital outlay of forty millions, a guaranteed interest on which would be required only for the few years necessary to develop traffic, Europe would have done her utmost to secure her highway to the East, and to regenerate Turkey and Persia; to render possible the placing of herself in a position the best for the interests of her empire, and to eventually reap the benefit of adding to the markets and the productions of the world and of recouping her outlay.

Allowing another outlay of ten millions for the improvements of harbours, canals, and roads, a total outlay of fifty millions on remunerative works, for which Europe may exact substantial guarantees by requiring certain revenues, etc., along the lines of works to be given over to her to administer and collect, a fraction of the cost of a war, only is required. Such an outlay, necessary as a European insurance, is insignificant in comparison to the amount insured; the rumour of a war causes the principal stocks quoted in the stock exchanges of Europe to fall in value over one hundred millions. It is a work in which the nations of Europe may well be called to co-operate, for defence is obligatory on us all. The sources of greatness and prosperity should be preserved by guaranteed loans, if, by them, they can be safeguarded, and to secure that history shall not repeat itself, and the East again overrun the West, is no small matter.

KURDISTAN AND SOUTH-WEST PERSIA AS A BARRIER TO ENCROACHMENTS FROM THE NORTH.

It was shown on page 1002 that before a good strategic and commercial communication could be aligned, it was necessary to lay down:—

- i. The military positions to be occupied in case of a Northern Power desiring by force to reach the Persian Gulf and Mediterranean Sea ;
- ii. A safe line, easily defended, enabling those positions to be readily reached and the troops in occupation to be quickly supplied with reinforcements, provisions, and munitions of war.

Before (i.) can be determined, it is necessary that we refer generally to the main topographical features of the country between the Black and Mediterranean Seas and India.

In the belt of country stretching from the Black Sea between the ports Samsun, Trebizond, in a general south-east direction by Sivas-Erzerum, Kharput-Bitlis-Van, Mosul-Souj-boulak, Kerind-Hamadan, Dizful-Julpaigan to Bushire-Shiraz, it requires no great strategist to see a line of defence, which guarantees to its holder the possession of, in the case of an enemy, and the safety of, in the case of a friend, both Turkey-in-Asia and Persia.

It may be divided into a hilly and a mountainous region, the former its offensive, the latter its defensive zone.

From the sea coast to the line Kharput-Bitlis-Van, the belt, the Armenian highland plateau, consists of grassy mountains and hills, fertile undulations, and rich agricultural valleys, generally difficult for military operations, with a climate for four months in the year of a severity to almost prohibit them, and traversed by few and difficult roads.

Its plains, those of Erzerum, Pasin, Khanus, Boulanyk, Mush, Alishgird, etc., grow grains largely.

This constitutes its offensive zone.

The fighting strength of this zone is that of three-fourths the fighting strength of Turkey-in-Asia; one-fourth being required as a support to troops holding the defensive zone. Hobart Pasha considers Anatolia to be the real nursery of the Turks, from whence she obtains her best soldiers and sailors, and whence comes the revenue that still keeps Turkey alive, and from whence *might* come such riches as California never produced !

To the south-east of the line Kharput-Bitlis-Van, stretching to the Persian Gulf, is a mountainous country, difficult to traverse except by hill paths suited to pack transport only, and closed by snow for four or five months in the year, inhabited by unruly tribes, practically free of control, chiefly nomads and subservient only in name to either Turkey or Persia. Reference is made to the Kurds, Armenians, Kizilbash, the Turki-speaking tribes of the mountains of Kurdistan, of Luristan, and of the Bakhtiari, the Kuhgeflu and the Kashkai.

In these mountains are the sources of the Tigris and Euphrates, watering the Mesopotamian plain, the Karun, the Hindiyān, etc., fertilising the coast plains of Persia; the Aras and Kizil-Uzen flowing into the Caspian; the Yeshil Irmak, Kizil Irmak, and Chorak flowing into the

Black Sea; they therefore constitute the main watershed of both Persia and Armenia, for in them rise their greatest rivers.

These ranges constitute the defensive zone.

This is not the place in which to consider fully the fighting strength of this zone, *i.e.*, of Kurdistan and South-West Persia;¹ suffice it to say that it is undeveloped, but no mean one if it receive the necessary training to give it confidence, and if it be backed by the nucleus of foreign troops necessary to give it cohesion.

In the offensive zone grains, fodder, and water, transport and live-stock (chiefly sheep) are plentiful; firewood, except in parts, is scarce. Trees are found in the coast ranges only.

In the defensive zone nothing is plentiful but fodder, live-stock (chiefly sheep), transport animals, water, and in places firewood (in the Central Kurdistan range).

In both cases transport will require time to collect, for it is found chiefly among the nomad tribes of Turkey and the Eliyat tribes of the Persian Zagros.

The belt, from the sea to the line Diarbekir-Bitlis-Van, is backed by a hilly country similar to itself; to the south-east of this line lie, to the west of the mountains, fertile alluvial plains watered by the Tigris and Euphrates, stretching to Arabia and the Syrian hills, across which are easy passes leading to Iskandarun, Suedia, Latikiyah, and Tripoli, etc., and the alluvial coast plains of Persia, capable of producing abundantly most excellent crops of wheat and barley, sugar, poppy, etc.

The alluvial plains are chiefly peopled by Arabs.

The primary bases to the left zone are the Mediterranean and Black Seas, and to the right zone the Mediterranean Sea, for its north-west section to the line Mosul-Souj-boulak, and, for its south-east section, the Persian Gulf.

Cyprus is capable of becoming the place-of-arms necessary to firmly establish the Mediterranean base, and the alluvial plains of South-West Persia that necessary to the Persian Gulf (see page 1012); the one is complementary to the other; the one as necessary as the other; the cultivation of both can be so improved as to support armies.

The secondary bases necessary for offensive and defensive military operations are, for the left zone, the line Samsun-Tokat-Sivas-Mardin, and for the latter the line—

Iskandarun	}	Urfa, Mardin, Mosul, Baghdad, Karmanshah, Burujird.
Suedia		
Tripoli		

These would be connected with the Sea of Marmora and the Ægean Sea by the lines already in course of construction, from Scutari *viâ* Angora and Smyrna *viâ* Koniah (see page 999).

¹ Sir H. Rawlinson writes:—"The tribes indeed on the Western Frontier (Persia), those inhabiting the range which runs from Ararat to Shiraz, are the very beau-ideal of military material, the men being athletic, strong, hardy, and active."

COMMUNICATIONS REQUIRED IN THE DEFENSIVE ZONE.

The main points at which the defensive can be penetrated from the East are—in Turkey, *viâ* Palu, Hazru, Rahwan, Khizan, Sart, Tchabchur, Amadiâh, Rowanduz, Suleimaniah, Karind; and in Persia, *viâ* Dizful, Behbahan, and Shiraz; all difficult hill roads, very defensible, very difficult to turn, and at present passable to pack transport only.

Unfortunately for Turkey the mouths of the passes leading into Persian territory are on the Persian side of the border, the frontier line having been drawn to the west of the watershed.

To block the above-enumerated roads through the defensive zone main positions must be taken up at Van (better Khoi, but Khoi is Persian) in rear of Souj-boulak, Hamadan (if an advance is attempted by Sakyz and Sahna), Burujird, and Ispahan.

To block the exits of these roads concentration of troops is required at Diarbekir, Mosul, Baghdad, Shustar, and Behbahan.

These are all points of first-class commercial and strategical importance commanding knots of roads or long stretches of mountains.

The railways designed to meet the above-sketched military requirements of the defence must therefore of necessity be based on both the Mediterranean Sea and the Persian Gulf. Its general run is indicated by the line below, determined by the military necessities already referred to, viz. :—

Iskandarun	{	Aleppo, Urfa, Mardin, Jazirah, Mosul, Baghdad, Zagros Gates, Karmanshah, Burujird, Ispahan.
Suedia		
Tripoli		

Baghdad to the Persian Gulf.

If the harbour of Tripoli is all that is desired, the preferable line is that of Tripoli-Homs-Aleppo.

The opening of river and cart-road communication from Muhammerah to Burujird and Karmanshah, and from Shustar *viâ* Behbahan to Shiraz and *viâ* Ardal to Ispahan, is necessary to supplement the Persian section of the railway until such time as the country shall be ripe for the construction of a line of rails from Muhammerah, *viâ* Shustar, Dizful, Khoramabad to Burujird, where it would join on to the main trunk line. The natural commercial prolongation of this line is *viâ* Hamadan to Tehran.

COMMUNICATIONS REQUIRED IN THE OFFENSIVE ZONE.

For the successful prosecution of operations in the left or offensive zone it has been shown that Erzerum and Van must be held in force with outposts thrown out to Keretchli Dag, Zewin, Alashgird, Pergri, and beyond, and that timely reinforcements of men and material must be pushed up from Trebizond and Samsun.

A good military road (requires repair) already exists from Trebizond, *viâ* Baibourt to Erzerum, and as the distance is only one hundred and twenty miles it need not be supplemented. From Samsun a railway is required, *viâ* Tokat, Sivas, a fine grain-producing district, Kharput,

mining district, and Diarbekir, commercial centre, to join in with the Mediterranean line at Mardin. The advantages offered by the double base, Mardin to the Black Sea and Mardin to the Mediterranean Sea, are very great; the former answers a double purpose, as it forms the secondary base for operations eastwards.

The branch military lines required are (see page 1001):—

- i. Sivas, Erzingham, Erzerum.
- ii. Kharpur, Mush, Bitlis, Van.

GENERAL PLAN FOR THE DEFENCE OF TURKEY-IN-ASIA AND PERSIA.

It is assumed that, for the defence of the belt, three armies are required, which may be termed the Eastern, the Western, and the Southern. As already noted, the services of a fourth or Persian army is desirable, but not necessary unless Persian territory be violated.

The Eastern and Western armies, operating in the offensive zone, would be based upon the lines Mardin to the Black Sea and Mardin to the Mediterranean Sea, and the southern or defensive army would be based on the line Mardin-Baghdad. The Persian army would be based on the lines Kharmanshah, Baghdad and Burujird, Shustar, Muhammerah.

The eastern army should be pushed forward to fortify and hold the passes blocking the roads leading from Artwin, Olti, Kars, Kachysman, and Erivan and to occupy in strength the fortresses of Van and Erzerum, the former as well as positions about, Melasgird and Pergri being converted into entrenched camps.

A mountainous district when properly held in a military sense (the passes, their inlets and exits being held) is the best defensive barrier, if occupied by good troops and supported by a well-trained and disciplined field army, the place of which is supplied by the western army to be formed along the base, Samsun to Kharpur.

The front held on the defensive is a strong one, and if bravely defended ample time would be given for the western army to reinforce it from Trebizond, Sivas, Diarbekir, etc.

The southern army would have as the theatre of its operations the defensive zone from the line Diarbekir-Van, south-east to the Persian frontier, occupying its passes, the junction of roads in the hills, with main concentrations at Diarbekir, Mosul, and Baghdad. This defensive front is very strong: it would be much improved if the mouths of the passes were in Turkish instead of Persian hands, *i.e.*, if the line Karmanshah-Sahna-Tabriz were Turkish and not Persian.

It is inhabited by Armenians, wild Kurds, Yezidis, Kizilbash tribes, proud of their ancient descent; but lawless and valueless as soldiers, unable to intelligently co-operate in the defence of their hills, but nevertheless offering good raw material for troops.

The possibility of these tribes and of the discontented Armenians falling a prey to Russian intrigue is a contingency to be foreseen and carefully guarded against; distasteful neighbours as they are, they hold

a belt of hills of great importance to the defence of the Persian Gulf and the coasts of Syria, and are bound to us by ties of common interest.

Any Eastern Power friendly to the Turks co-operating with them could best do so by concentrating in the area Karmanshah, Sahna, Burujird, Hamadan; such a force could move on Tabriz, Khoi, Ardabil, thus flanking all the passes through the Zagros; or towards the Caspian.

This force would be connected with its base, the Persian Gulf, by the lines given on page 1010.

Co-operation between the four armies presents no difficulties; the bases from which they operate, being joined by railway, are practically one.

All the above considerations point to the important part that the area Karmanshah, Sahna, Burujird, Hamadan, is capable of playing in the defence of both Turkey-in-Asia and Persia and the Persian Gulf, and it is most necessary that ready access should be given to it from the Tigris at Baghdad, and thence by rail and by the Karun River to Shustar, and thence by rail or road to Burujird and Karmanshah.

The area in question besides protecting the Eastern outlets of the passes across the Kurdistan hills to Van, also protects the whole of South-West Persia from the line Hamadan-Ispahan to the Gulf, and prevents all passage through the Lur, Bakhtiari, and Kashgai hills.

A naval Power, based on the Gulf, administering South-West Persia (from the line Hamadan-Ispahan, southward to the Gulf) with her advanced troops occupying the area designated, is in a position to watch over the integrity of Persia, to prevent what is vital to Europe being seized by another, and to safeguard the overland railway route to Asia. This overland route is essentially a European one; it is a link in a communication demanded by the interests of Greater Europe, and is one of her highways in which all her Eastern Colonies and possessions are interested.

Amongst colonists are some of the most vigorous of our races, who must be included in the war organisations and councils of their mother countries. The simple fact of a man being a colonist often stamps him as a man of purpose and determination. By sharing common responsibilities, communities are ennobled and rendered inter-dependent; honour and shame must be shared together, for their rise and fall must of necessity be one.

Even supposing that the Turks, in a fit of madness caused by irritation consequent on having forced upon them a better rule, turn against Europe, the subject Armenians, Kurds, and Arabs, bordering on the line of railway, would be with her, and even should they (the Turks) join with Russia for a time, it would be but for a time, until their fit of madness passed and self-interest and the love of national existence re-asserted themselves with a double fervour, and in the meantime the naval Power holding South-West Persia and the adjoining portion of Kurdistan, based on the sea and acting on the defensive, would occupy an impregnable position.

South-West Persia, surrounded by the sea, lofty mountains, and desert tracks, combines the advantages of a continental situation with practically

those of an island. It is based on the sea, the best of Europe's bases, stocked with the most rapid and cheapest of all carriage, *i.e.*, her mercantile marine

The military reasons for the railway taking the line Karmanshah-Ispahan are now apparent; the commercial reasons have already been given (see page 1001).

SUMMARY.

Let us make up our minds to the inevitable and acknowledge the actual. The actual is that lawlessness, oppression, and venality are triumphant from the Mediterranean Sea to the borders of India: that Oriental misrule can never right it; that the West must supervise the East for the simple reason that the East is incapable of ruling itself, and the only gainers by the present state of things are the few, whilst the many sigh for relief and will welcome whoever brings it, whether Europe or Russia; that a European administrative control would be as greatly preferred to a Russian absorption as a traditional friend is esteemed above a deadly foe; and the inevitable is that one or other fate awaits these countries the integrity and strengthening of which by administration it is Europe's interest and destiny to accomplish, for in them lie the keys to Asia, which, if in the possession of Russia, would enable her to seriously cripple, and at all times to seriously endanger, if not altogether domineer over Europe, for we must remember that fleets and battalions and enterprise can only be met by like and equal forces.

The force of circumstances and geographical position have given Europe these disagreeable neighbours, and she must be prepared to treat them as such. She must either go further than she has done or be prepared to fight for existence in the East under such unfavourable circumstances that she cannot hope for success.

If she refuses to see the necessity of guaranteeing, in a measure, the integrity of these decaying Oriental Powers—Powers the genius of whose religion and whose modes of life are suited only to a primitive civilisation—as an offset against the advantages of controlling Mesopotamia, Kurdistan, and South-West Persia; or if mutual conditional guarantees cannot be satisfactorily arranged, then the inevitable is that she must occupy herself or purchase the keys of her empire that lie within their domains; occupying them, with or without permission, if Russia persistently advance so as to threaten to absorb them, and their lawful owners be unable to resist her—lest she gain vantage ground, from which it will be impossible to eject her, and they be hers for ever.

To render the contingency of occupation possible and its possession effective, the strategical communications and works described are emphatically necessary.

The argument that the European Governments will not combine to meet a possible danger of this nature, or endeavour to overcome the political difficulties in connection with it, is to argue that their patriotism is dead and their intellect dulled, and Europe a decaying and no longer a progressive force. Any Governments undertaking it, if convinced of its necessity, may be assured of the support of every patriot.

By deed of gift, Turkey may, by stress of circumstances, make them over as suggested.

A circumstance that ought to be seriously considered is that the keys of Persia and Turkey-in-Asia are held by neither Persians nor Turks, but chiefly by aboriginal nationalities still but partially conquered, and from whom taxes are gathered by force only. Reference is made to the Kurds, Lurs, and other wild tribes inhabiting the Zagros range, and the Arab tribes to their west and south. They have the spirit of independence amongst them, a spirit allied to that of Europe, that of freedom, and opposed to that of Russia, serfdom. Within and to the immediate rear of these hills, the plains stretching to the Gulf and the Euphrates, lie the keys to the Eastern Empire necessary to the security of Europe.

The control of this belt, the superintendence of its revenue and its expenditure, from the line Van-Urfa in a south-east direction to the lines Muhammerah, Burujird, and Bushire, Shiriz, together with the construction of the public works advocated, suffice to put Europe in the position required for her own safety, and, as well, that necessary to safeguard that of Turkey-in-Asia and Persia and keeps Russia for ever in her own sphere.

Loss of territory, by giving up districts to be controlled, does not mean loss of revenue to the giver, but the reverse; by sympathy it also necessitates the better government of the remainder; a well-governed region will pay for the public works necessary to develop it, for the army necessary to ensure its tranquillity, and leave a handsome surplus. Indeed, so unable are Turkey and Persia to govern these districts that their alienation would be to them a source of strength and an infinite boon to their inhabitants.

In its various parts it is rich in the sinews of war, *i.e.*, men, transport animals, grain, fodder, butter, milk, firewood, etc. The Lurs and Kurds and certain Arab tribes are composed of men whose pastime till recent years has been war and plunder; they are good sportsmen, hardy and courageous. Luristan is a breeding ground of mules; donkeys abound; the Arab horse is reared in the Mesopotamian plains; the camel abounds; grain is abundant in all the valleys, those of the Tigris, Euphrates, Karun, Hindiyan, and lesser streams; the fodder in the Zagros hills is inexhaustible, and there sheep, cows, butter, and milk are plentiful; oak and other trees are found in abundance in certain zones of the hills, etc. The nature of the rivers and the lie of the country generally favour irrigation. Such a country is worth to a commercial company a thousand new Borneos, and is of equal value to a second India.

The men are of course valueless until trained, for each would eat more than his worth.

Both India and Afghanistan are secured by a position taken up about the bend of the Halmand connected by rail with India and the Gulf, and the strengthening of the secondary base Kabal, Kandahar, by rail to Kabal and Kandahar, the construction of the necessary entrenched camps to secure vital base centres and the control of the country to the

Hindu Kusk, to the extent necessary to ensure that the fabric of the policy of India's defence shall not collapse should the Amir break faith with us.

Afghanistan is the fulcrum of the lever by which General Hamley assumes that Russia will open her way to the Mediterranean. Thus secured, the lever cannot be worked.

The country lying between Seistan and South-West Persia is secured by the position which it is supposed has been taken up in Afghanistan and Baluchistan, and that in the belt of country which may be described as Kurdistan and South-West Persia, inhabited by Kurds, Lurs, and Arabs, and not by Turks or Persians.

Such positions are to Europe places-of-arms of paramount importance, inasmuch as they overshadow those of Russia in the Caucasus and Trans-Caspia, to be occupied by the one or other of her Powers most interested in their tenure.

Their occupation renders it impossible that Persia shall fall as a ripe pear into Russia's lap by being pressed out of life between Afghanistan and the Caspian; they relieve Turkey-in-Asia of the fear of annexation and absorption, which must be her fate if the Persian Gulf and the Black Sea become Russian lakes. The importance of Europe well understanding their commercial, strategical, and tactical values is great, and the necessity of arranging communications to suit her needs urgent.

If the belt is occupied by Russia, the doom of both Turkey and Persia, the Persian Gulf and the Dardanelles, is sealed, and she will have gained a position from which she cannot be ousted, strengthened as it would be by art and backed by millions of soldiers.

Occupied on the offensive-defensive principle as already suggested, it forms an impregnable position against which an invader would break her strength. The difficulties of ground, if enlisted on the side of the defensive, multiply its strength; if given over to the offensive, defence is impossible except by prohibitive numbers.

A few years back the line of the Caucasus could have been held from sea to sea on the defensive and Turkey-in-Asia and Persia for ever protected; the opportunity was lost and the chief defence of these countries fell to Russia; but one more defensible belt is left; it is the last line of defence, and, if it be lost, the opportunity of protecting them has gone for ever. If Russia be allowed to possess herself of the western outlets of the Kurdistan range leading into the plain of Mesopotamia, nothing can prevent her from overrunning them at will, and to thus obtain her greatest desires: a Mediterranean sea-board; the security, even from menace, of her southern borders in the Black Sea; and the monopoly of the Black Sea trade.

Napoleon considered the valley of the Tigris to be the strategical key of the whole world. Such sayings are not unimportant, although the present generation may be unable to assign specific reasons for them. This paper has endeavoured to show that that nation which commands it is mistress of the destinies of the East. All Europe knows its value, and its security must form an integral part of any scheme for the defence of her Asiatic colonies and possessions.

It may be said that this paper has left untouched the most difficult question in connection with the subject treated, viz., that of diplomacy. Diplomacy has for its aim the gaining of the military end by peaceful means, if possible. What the commercial and military requirements are this paper has endeavoured to show; and in no other, except in this legitimate way, has the work of the diplomatist been trenched upon, because it would be impertinence to do so. It is when the eloquence of the tongue and the conceits (and alas! the deceits also) of the brain fail that diplomacy calls to its aid the violence of military power, to gain by force what it has been unable to attain by other means.

The diplomatist has to be as much guided by common-sense views of geography, peoples, and national requirements as others; the instinct of self-preservation and patriotism is as strong in him as in others, and the considerations set forth in this paper will, it is hoped, assist him in his difficult task.

With India, Afghanistan, and Baluchistan secured as recommended on page 1014, the contest for Eastern empire between Russia and Europe must be fought in the regions where were enacted the opening scene of the world's history, before and after the Flood; and fortunately no more favourable battle-field need be sought by her to witness its closing drama, if she but take ordinary precautions to prepare it to suit her needs.

It may be said that the necessity of the works proposed in this paper are apparent, but that to carry them out is impossible, because the nations through whose territories they run do not wish for them or the terms asked are prohibitive. Doubtless the difficulties in their initiation are enormous; but equally doubtless is it that, if guarantees are given by both sides, the difficulties will disappear. Boldness and decisive action will give Europe decided influence at Constantinople and Tehran. She cannot expect valuable concessions for nothing, and must be prepared to pay a fair price, both in money and assumed responsibility, for future security and increased commercial facilities.

If this work of regeneration be undertaken, let it be carried out with a determined spirit. If it be set about in a half-hearted manner, with a thought of withdrawing from it in the face of the many difficulties which must confront it, it would be better not to attempt it at all.

Many have preached on the same text before. They were prophets in those days; for they began to prophesy when the shadows thrown were faint, and the light throwing them obscure—and they were not believed. The shadows now loom black and lowering; and the light casting them is as clear as the sun in the heavens at noonday. Let us hope that the coming events foretold by them may be realised before the words "too late" must be uttered.



BLACK SEA





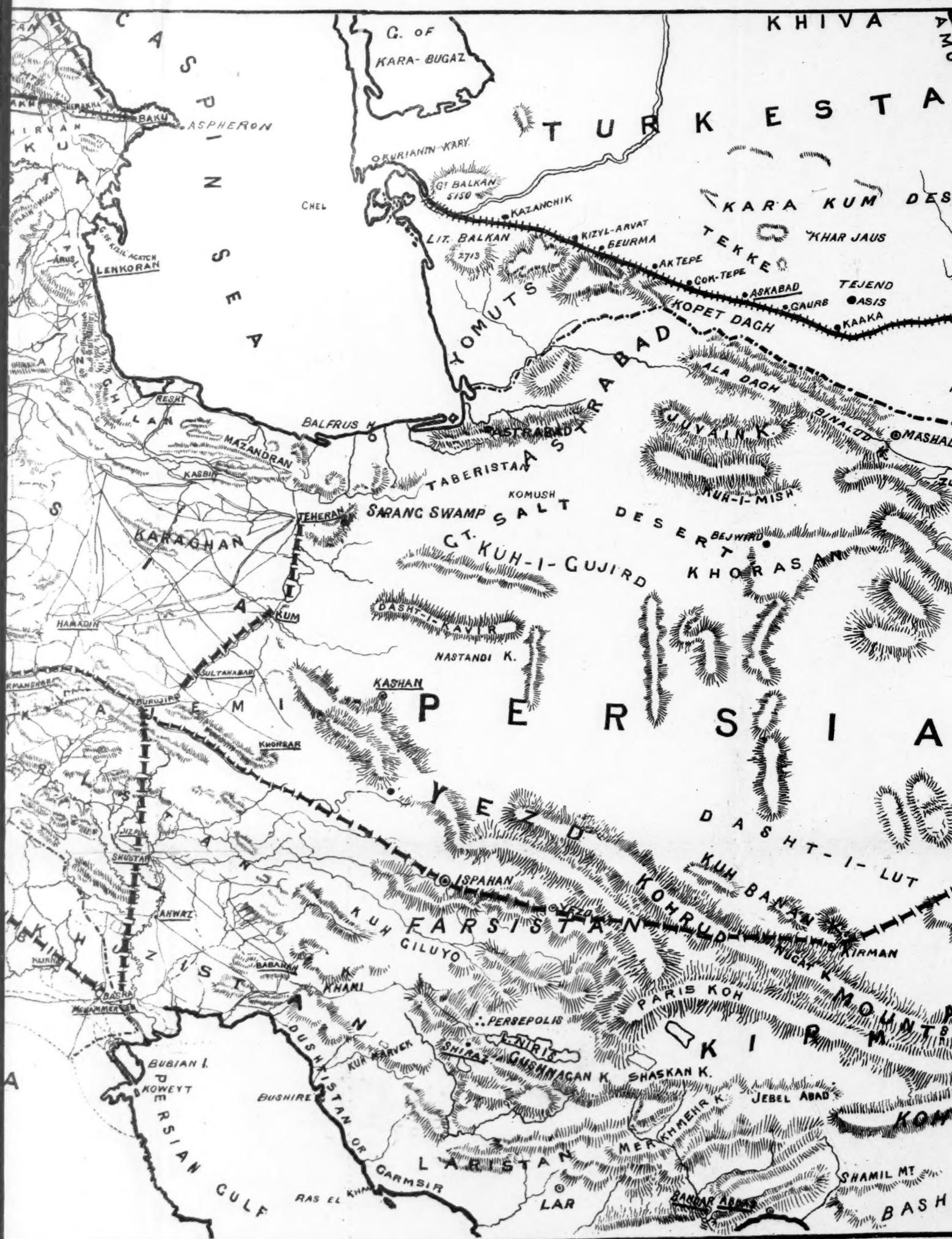
COMMERCIAL & STRATEGIC LINES OF RAILWAY
THROUGH

TURKEY-IN-ASIA

AND
PERSIA TO INDIA

AND
THEIR DEFENCE.

RAILWAYS COMPLETED OR ABOUT TO BE 
RAILWAYS CONTEMPLATED (ALTERNATIVE, ETC.) 





NAVAL NOTES.

HOME.—The following are the principal appointments which have been made : Rear-Admirals—Pelham Aldrich to be Admiral-Superintendent of Portsmouth Dockyard ; Swinton C. Holland to be Admiral-Superintendent of Chatham Dockyard. Captains—W. H. Pigott to "Devastation" as Senior Officer at Gibraltar ; T. H. M. Jerram to "Boscawen" as Assistant to Inspecting Captain of Boys' Training Ships ; C. J. Norcock to "Alexandra" as Assistant to Admiral-Superintendent of Naval Reserves ; J. L. Burr, C.M.G., to "Andromeda" ; Percy Scott to "Terrible" ; C. G. Robinson to "Vernon" ; J. Durnford, C.B., D.S.O., to "Jupiter" ; J. E. Blaxland to "Thunderer" ; R. P. Humpage to "Benbow" ; F. H. Henderson to "Hermes" ; C. L. Ottley to be Naval Attaché at Washington. Commanders—E. F. Inglefield to "Swallow" ; H. Grant-Dalton to "Seagull" ; J. F. Parry to "Dart" ; A. H. Ravenhill to "Porpoise" ; R. P. Floyd to "Fearless" ; H. L. Tottenham to "Barham."

The "Powerful" has been ordered home from China, and her place is to be taken by her sister ship the "Terrible," which is to leave Portsmouth at the end of this month for her station, if her steam trials are successful. The new first-class cruiser "Andromeda" commissioned at Portsmouth on the 5th inst. for service on the Mediterranean station, where she takes the place of the "Hawke," a much smaller vessel. The new second-class cruiser "Hermes" is to be commissioned on the 5th prox., to relieve a sister ship, the "Talbot," on the North American and West Indian station. The first-class gun-boat "Magpie" paid off at Devonport on the 2nd ult. from her commission on the Cape and West Coast of Africa station. The first-class cruiser "Edgar" paid off at Devonport on the 4th ult. ; she is to have defects made good in readiness for further relief service. The first-class belted cruiser "Impérieuse" arrived at Portsmouth from the Pacific, where she paid off on the 31st ult. ; she is to be transferred to Chatham. The first-class gun-boat "Redbreast" paid off at Devonport on the 22nd ult. from her commission in the East Indies. The torpedo gun-boat "Seagull" commissioned at Portsmouth on the 29th ult. for a series of trials with the Niclausse type of water-tube boilers ; during the trials her headquarters will be at Devonport. The new first-class gun-boat "Dwarf" commissioned on the 31st ult. for service on the West Coast of Africa, where she is to take the place of the "Widgeon," which vessel is, however, to be temporarily retained on the station.

Steam Trials.—The trials of the new first-class battle-ship "Ocean" have been postponed for some weeks, as it has been discovered that there is a fracture in the high-pressure cylinder of her starboard engine. This will necessitate the removal of the cylinder, and part of the deck will have to be cut away to allow of this being done.

The trials of the new first-class battle-ship "Canopus" have been successfully completed at Portsmouth. Her first run at one-fifth of her power was unsatisfactory, owing to the heavy consumption of coal caused by the waste of water due to leaky joints. She has now completed two more trials at one-fifth and four-fifths of her power successfully, each run having been for 30 hours. The ship was on an even keel, the draught being 26 feet fore and aft ; the steam in the boilers at the one-fifth power run was 230 lbs. to the square inch, and at the four-fifths trial 255 lbs. ; the vacuum at the one-fifth power run was 27·2 inches starboard and 27 inches port, and during the four-fifths power trial 26·5 inches starboard and 26·2 inches port ; while the revolutions were 64·5 starboard and 63·9 port, and 100·1 starboard and 99·3 port on the

two runs respectively. During the one-fifth power trial the engines developed 2,812-I.H.P., with a coal consumption for all purposes of 1.28 lbs. per unit of H.P. per hour, and during the four-fifths power run 10,454-I.H.P., with a coal consumption of 1.68 lbs. for all purposes per H.P. per hour. The speed at the economical trial was not taken, but at the four-fifths power run the patent log recorded a mean speed of 17.2 knots. At the eight hours' full-speed trial, the ship was on an even keel, drawing 26 feet; the pressure of steam in the boilers was 289 lbs.; and the vacuum 25 inches starboard, and 25.9 inches port. The engines worked with such evenness that as the mean of the eight hours' run they each showed 108.5 revolutions a minute, with a collective I.H.P. of 13,763, being 263-H.P. over the contract. The mean air pressure was .19 inch, and the mean speed was 18.5 knots, with a coal consumption of 1.72 lbs. per H.P. per hour.

The third-class cruiser "Barham" has completed at Portsmouth a series of progressive trials which were ordered to be carried out in order to compare results with later third-class cruisers, like the "Pelorus" and "Pandora." The trials were begun on August 10th and 11th, when the ship was run at her load draught of 11 feet 9 inches forward and 14 feet 9 inches aft, and they were continued on the 16th and 17th at her light draught of 10 feet 6 inches forward and 14 feet 6 inches aft. In each case the result is the mean of four runs over the measured mile in Stokes Bay.

	Light Draught.	Load Draught.
Revolutions per minute	100.1	101.2
Steam in boilers	132 lbs.	130 lbs.
I.H.P.	551	616
Speed in knots	10.138	10.078
Revolutions per minute	143.5	143.9
Steam in boilers	133 lbs.	127 lbs.
I.H.P.	1,701	1,899
Speed in knots	14.266	14.164
Revolutions per minute	177	183.5
Steam in boilers	138 lbs.	129 lbs.
I.H.P.	3,242	3,683
Speed in knots	17.553	17.837
Revolutions per minute	201.2	204.4
Steam in boilers	138 lbs.	138 lbs.
I.H.P.	5,008	5,410
Speed in knots	19.572	19.585
Revolutions per minute	210.4	202.2
Steam in boilers	142 lbs.	128 lbs.
I.H.P.	5,870	5,280
Speed in knots	20.069	19.491

The vessel is at once to be brought forward for commission on the Mediterranean station.

The new first-class gun-boat "Thistle," built and engined by the London and Glasgow Shipbuilding Company, has completed her contract steam trials. The "Thistle" is a sister ship to the "Dwarf," which has just completed for sea at Devonport, and the satisfactory results which the latter vessel attained on her steam trial have been eclipsed by those now attained by the "Thistle," which has already proved herself to be a far more economical steamer than the "Dwarf," which on her 30 hours' run under the same conditions recorded a coal consumption of 2.37 lbs. The mean results of the 30 hours' trial were:—Steam, in boilers 186 lbs., at engines 175 lbs.; vacuum, starboard 26 inches, port 26.5 inches; revolutions,

starboard 230·5, port 229·5; I.H.P., starboard 344, port 352—total, 696; speed, 11·5 knots; coal consumed per I.H.P. per hour, 2·13 lbs. The results of the eight hours' natural-draught trial were equally satisfactory, and as follows:—Steam, in boilers 215 lbs., at engines 205 lbs.; vacuum, starboard 25·5 inches, port 25·7 inches; revolutions, starboard 254·5, port 255; I.H.P., starboard 475, port 485—total, 960; air pressure ·5 inch; speed, 13 knots; coal consumed per I.H.P. per hour, 2·15 lbs. On the four hours' forced-draught trial the results were:—Steam, in boilers 220 lbs., at engines 200 lbs.; revolutions, starboard 280, port 282; I.H.P., starboard 680, port 670—total, 1,350; air pressure, ·75 inch; coal consumed per I.H.P. per hour, 2·47 lbs.; speed, 13·5 knots.

The new torpedo-boat destroyer "Coquette," built by Messrs. Thornycroft, has completed her trials with the following results:—Draught of water, forward 5 feet 11½ inches, aft 7 feet 4½ inches; speed, 30·211 knots; steam pressure in boilers, 216 lbs. per square inch; air pressure in stokeholds, 2·72 inches; vacuum in condensers, starboard 25·0, port 24·9; revolutions per minute, starboard 383·8, port 388·6; mean I.H.P., starboard 2,820, port 3,048—total, 5,868. The contract requirements were exceeded.

The second-class cruiser "Talbot," on the North American and West Indian station, has lately made a most successful four hours' trial under natural draught, during which she averaged 19·3 knots, a speed somewhat over what she reached on her commission trial; the run from Barbados to Port Royal, a distance of 1,040 miles, was made in 62 hours, at a mean speed of 16·8 knots. The "Powerful" in China has also been making another successful run, averaging 20·8 knots per hour for her four hours' run, although the coal was not good, and continuing her passage to Wei-hai-Wei at a speed of 20 knots, which she seems now to be able to maintain in ordinary circumstances of weather for practically as long as her coal holds out.

Armour-plate Experiments.—Experiments have lately been concluded at Shoeburyness with some samples of a new kind of armour-plate, 6 inches of which is of ordinary steel and 3 inches of a special composition, the nature of which is not made public. These plates have been fired at with a 350-lb. projectile at a distance of 200 yards. When black powder was used the plate was practically uninjured after several shots, and in some cases the projectile was reduced to dust by the force of the impact. With cordite it was found that the plate could be penetrated for about 3 inches or even pierced; but the severest tests failed to cause the plate to crack, a circumstance that will make it useful in naval warfare, for a hole beneath the water-line can always be plugged with matting. Two shots were then fired at a plate simultaneously, striking the plate a foot apart, but still the composition was not fractured. The plate was then fired at obliquely, when it was found that the special facing split from the steel backing, although the welding was previously invisible to the eye.

New Regulations defining Service.—The Admiralty have issued new regulations simplifying the system under which officers of the executive branch of the Navy reckon their service while on full pay, for the several purposes of promotion, retirement, etc. The principal change is a more rigid definition of "Service in a ship of war at sea," which in future will be as follows:—*a.* All time served on board ships or vessels commissioned for sea service, or in vessels actually employed in surveying. *b.* Service in coastguard-ships, port guard-ships, and Royal Naval Reserve drill-ships whilst kept fully manned for sea service. *c.* Service in sea-going tenders to coastguard-ships, in training duties during the cruising season, and in such other tenders to harbour-ships as the Admiralty may declare to be sea-going tenders. To qualify a captain for promotion he must have served in a ship of war at sea for six years during peace, four years during war, or five years during peace and war combined. Captains who arrive at their turn for promotion without having completed the qualifying service are to be retired. To qualify a

commander for promotion he must have completed two years' service as a commander, of which one year must have been in a ship of war at sea. To qualify a lieutenant for promotion he must have completed four years' service as lieutenant, of which three years must have been in a ship of war at sea. A lieutenant, however, may be promoted to rank of commander for gallantry in action, provided he has completed two years' service, of which one year must be in a ship of war at sea. The new regulations have obtained the sanction of Her Majesty in Council, and will be made retrospective from April 1st.

New Torpedo-boat Destroyers.—The Admiralty have placed orders with private firms for the construction of 12 new torpedo-boat destroyers for the Royal Navy. The new destroyers are to be named "Racehorse," "Roebuck," "Greyhound," "Lively," "Sprightly," "Myrmidon," "Peterel," "Syren," "Success," "Falcon," "Ostrich," and "Vixen." The "Racehorse," "Roebuck," and "Greyhound" are to be built by Messrs. Hawthorn, Leslie & Co., of Newcastle-on-Tyne; the "Lively" and "Sprightly" by Messrs. Laird Brothers, of Birkenhead; the "Myrmidon," "Peterel," and "Syren" by Palmer's Shipbuilding Company, of Jarrow-on-Tyne; the "Success" by Messrs. Doxford & Sons, of Sunderland; the "Falcon" and "Ostrich" by the Fairfield Shipbuilding Company, of Glasgow; and the "Vixen" by Messrs. Vickers, Sons & Maxim, of Barrow-in-Furness. A sum of £397,095 will be expended upon their construction during the financial year ending March 31st, 1900.—*Times and Naval and Military Record.*

Naval Manœuvres.—The result of the manœuvres was the successful bringing into Milford Haven by the (B) fleet, under Sir Compton Domville, of the convoy. But as has so often happened before, the operations which brought about this result did not come up to expectation, and as a matter of fact the two fleets never really came in touch with each other. In the July number of the JOURNAL we gave full details of the composition of the two fleets, which it is hardly necessary to repeat, but it may be as well to give once more the object and "general idea" of the manœuvres as laid down by the Admiralty, as well as the rules which had to be observed by the two opposing forces, which want of space prevented our giving in July:—

1. The principal object of the 1899 manœuvres was to obtain information as to the most advantageous method of employing a considerable body of cruisers in conjunction with a fleet.
2. A subsidiary object was to throw some light on the relative advantages and disadvantages of speed and fighting strength.
3. Another subsidiary object was to obtain information relative to the working of destroyers and torpedo-boats.

The "general idea" of the operations was as follows:—

- 1.—A British convoy (C) of slow ships, escorted by a fast cruiser, on passage from Halifax to Milford Haven, was ordered to wait at a certain rendez-vous for the arrival of a protecting squadron.

N.B.—The slow ships could not be taken in tow, were obliged to remain in company, and had no fighting value.

2. A hostile squadron (A) of fast ships, lying at Belfast, was sent to sea to intercept and capture the convoy and bring it into Belfast.
3. After an interval a superior British squadron (B) of slower ships was sent to protect the convoy (C), which had been ordered to a pre-arranged rendez-vous, cover it from the hostile squadron and bring it into Milford.

The whole of Ireland was hostile territory and belonged to (A). The West of England and Wales from the Island of Islay to the Lizard, including the Scillies and the Isle of Man, was British territory. The hostile fleet (A) had

torpedo-boats at Waterford, Kingstown, and Belfast, while the British Fleet (B) had destroyers at Milford Haven, Holyhead, and Lamlash.

The rules and regulations to be observed during the manœuvres were as follows:—

"The ports of Belfast and Milford Haven were to be considered as strongly fortified and proof against torpedo attack within the following limits:—

Belfast—within a line drawn from Black Head to Orlock Point.

Milford—within a line drawn from St. Ann's Head to Sheep Island.

After hostilities had commenced ships outside these limits were liable to attack from any vessel of the enemy.

Destroyer and torpedo-boat stations were proof against attack.

All other ports in the territories of the respective admirals were open and undefended, and could be used only by vessels of the side to which the ports belonged at their own risk.

The signal stations marked on the special chart issued with the instructions for the distribution of intelligence were alone to supply information during the manœuvres.

The fleets with their respective flotillas, being at their respective base ports, were warned by a telegram to "prepare for hostilities"; upon which the flotillas, with their dépôt ships, were sent off to their stations. Each fleet was free to send out vessels of the flotillas, but none of them were to lie off an enemy's port during this time of preparation in such a manner as would be calculated to precipitate hostilities during a period of strained relations.

Not later than 48 hours after the telegram to "prepare" the telegram to "commence hostilities" was to be sent, but no attempt was to be made by officers in command on either side to put a vessel out of action until it was known to them for certain that hostilities had begun.

All battle-ships were to be considered of equal power; the superiority of one battle squadron over another was to depend alone upon which had the greater number of battle-ships.

The following table governed battle-ships, cruisers, and smaller vessels being put out of action:—

Number and Class of Vessel.	Can put out of Action.	At what Distance.	In what Time.
One battle-ship	Battle-ship	Within 2 miles ¹ ...	One hour
One battle-ship	Any cruiser	" 3 miles ..	30 minutes
One first-class cruiser {	First-class cruiser or ship of lower class {	" 1 mile ...	30 "
One second-class cruiser {	Second-class cruiser or ship of lower class {	" 1 mile ...	30 "
One third-class cruiser {	Third-class cruiser or ship of lower class {	" 1 mile ...	30 "
Two cruisers of same class	One cruiser of same class	" 1 mile ...	30 "
One torpedo gun-boat ...	Torpedo gun-boat ...	" 1 mile ...	30 "
One destroyer	Torpedo-boat	" 1 mile ...	5 "
Two torpedo-boats ...	Destroyer	" 1 mile ...	5 "
Battle-ships, all cruisers, {	Destroyer	" 1,000 yards	3 "
torpedo gun-boats {	Torpedo-boat	" 1,000 yards	3 "

¹ In the case of squadrons this distance was that between the nearest ships.

The period of "action" was to be between the two guns which either ship might fire to mark it; the first was to be fired when the two ships were within the prescribed distance, and the second from the same ship at the expiration of the time allowed; no other guns than these were to be fired.

No ship could put two vessels out of action in the same time; each was obliged to have its separate time allowance.

No cruiser of a lower class could count against a cruiser of a higher class.

With squadrons of cruisers composed of more than two of the same class, if the superiority were less than two to one, one cruiser on the more numerous side was to be put out of action as well as all the cruisers on the less numerous.

Ships put out of action under the rules could take no further part in the manœuvres, but had to return to their port—Milford or Belfast—flying the Blue Peter at the fore. They were to select a route as far as possible clear of the scene of operations, and were strictly enjoined not to communicate any information to the ships on either side which they might meet on the way.

No battle-ships could be put out of action except by battle-ships or if torpedoed.

As the 18-inch torpedo cannot be fired at a ship in a peace exercise, a destroyer was to fire a blue light at night or blow a whistle by day at the moment when the torpedo would be discharged, the tube being trained and all adjustments made as if actually firing; the distance at the time of firing had to be within 500 yards, and the number of torpedoes considered successful was to be assessed by the umpires.

Any vessel would be out of action if a torpedo fired from a torpedo-boat struck her before the torpedo-boat was herself out of action.

At the expiration of the period of hostilities, vessels which had returned to port would carry out such orders as they have received relative to target practice, and either return to ports of assembly or rejoin their squadrons, as might be ordered by the respective vice-admirals.

Any points which arose, not provided for by these rules, were to be decided by the umpires according to what, in their opinion, would be probable in war."

War was declared at 10 a.m. on Saturday, the 29th, and (A) fleet immediately put to sea, passing round the North of Ireland into the Atlantic, without being molested by the enemy's destroyers, several of which were however sighted, when the squadron first left Belfast, but Admiral Rawson had his fleet too well in hand, and his torpedo-boats too skilfully placed, to give the destroyers any chance of making a dash with success. The battle-ships were in divisions in line ahead disposed to starboard, the divisions being 8 cables apart and the ships in each division 2 cables apart; on either hand of the battle-ship squadron a division of four cruisers was disposed at a distance of 9 cables, the ships in each division being 5 cables apart. Outside the starboard cruiser division, the side nearest to Lamlash where a flotilla of the destroyers was stationed, six torpedo-boats were disposed in pairs in line ahead, the boats of a pair being 500 yards apart and the intervals between the pairs being $4\frac{1}{2}$ cables; the object of placing the torpedo-boats in pairs being, that, according to the rules, two torpedo-boats so disposed could at a quarter of a mile put a destroyer out of action in five minutes, while the destroyer could only put them both out of action in ten minutes; on the port hand four torpedo-boats were disposed in line ahead at 5 cables apart, each boat being opposite to an interval in the port cruiser division, the whole of this disposition being designed to make it impossible for a destroyer to get within striking distance of a battle-ship without having been under fire for a period longer than was required to put her out of action. Soon after leaving the anchorage the weather became thick, and as soon as the ships were clear of the North Channel, the admiral took advantage of this circumstance to send the torpedo-boats back to Belfast. During the next four days fog more or less dense prevailed the greater part of the time over the area, where the (A) squadron was searching for the convoy, an area bounded on the east by the west coasts of Ireland and Scotland, and on the west by a curve, each point of which was at a sea distance from Milford equal to that at which the rendez-vous was placed, and which comprised something like 100,000 square miles. In spite of the thick

weather experienced, a large portion of this field was effectually swept by Admiral Rawson's vessels; but on the 2nd August, nothing having been discovered of the convoy, the admiral determined that the game was up and they had missed the convoy, which probably by then was safe at Milford, as indeed was the case; so concentrating his squadron again, he determined if he could not overtake the enemy to return to Belfast by the Irish Channel, thus giving the (B) fleet an opportunity of attacking him *en route*; but having sent the "Niobe," one of his cruisers, in towards Milford to obtain information, she brought back word that the Admiralty had ordered hostilities to cease, so course was altered instead for Portland, where the fleet anchored on the morning of the 6th August. Although unsuccessful in finding the convoy, yet there is no doubt most excellent work was done by Admiral Rawson's ships, in spite of the fact that two of his cruisers were captured by the enemy; and the ease with which the admiral, in spite of the fog, picked up his ships again on the morning of the 2nd, speaks volumes for the skill with which they had been handled, and the strict attention which had been paid to carrying out his instructions.

The operations of (B) fleet were, on the other hand, very simple. The convoy had been ordered to heave to in the Atlantic at a rendez-vous 570 miles distant from the base of the (A) fleet and 750 miles distant from Milford Haven, the base of the (B) fleet. The enemy's fleet was allowed a start of 19 hours, so it was not until 5 o'clock on the morning of Sunday the 30th July, that Sir Compton Domville was able to leave Milford Haven with his fleet, when he immediately detached three of his first-class cruisers at high speed to effect a junction with the convoy, if possible before the (A) fleet arrived on the scene; steaming at a speed a little over 17 knots, these ships, without sighting the enemy and not much troubled by fog, found the convoy a little after 3 o'clock on the Monday afternoon. The admiral had followed with the rest of the fleet at a speed of about 11·5 knots; the "Juno," which had been fitted, along with the "Alexandra," the flag-ship, and the "Europa" with one of Marconi's installations for wireless telegraphy, had her station some 10 to 20 miles ahead, and kept the admiral informed of fog-banks, etc., and at 7.30 p.m. on the 1st August she was enabled to inform him that the "Europa" had communicated to her the finding of the convoy; at that time the "Juno" was some 30 miles ahead of the flag-ship and some 25 miles from the "Europa," so a signal was transmitted over a distance of nearly 60 miles by two ships, which was a veritable triumph for Marconi and his system. The safety of the convoy was now assured, and a junction being effected before midnight, the admiral returned to Milford, first detaching four of his cruisers to search for and cut off any of the enemy's cruisers, which might be found lurking about, and also to try and gain some information as to the whereabouts of the (A) fleet; this small squadron succeeded in capturing two of the enemy's cruisers, the "Furious" and the "Pactolus."

In spite of the disappointment arising from the fact that the two hostile fleets never came into touch with each other, yet the manœuvres have been productive of two good results, leaving on one side altogether the question of the valuable training to officers and men, which the manœuvres afford. The first is, the success of the wireless system of telegraphy, which must revolutionise the method of transmitting intelligence at sea; the second is, that in spite of the predictions of the prophets of evil, the ships with water-tube boilers came successfully out of the ordeal. There seems to have been no difficulty, even in the newly-commissioned ships, in rapidly attaining a high rate of speed when necessary, and the "Vindictive," although a ship specially commissioned for the manœuvres, seems to have done particularly well in this respect, as she easily maintained a speed of 20 knots, and out-steamed the "Furious," a sister-ship belonging to the Channel Squadron, which has been in commission for more than a year. This is a matter of considerable importance, as it shows that with proper care and attention no trouble need be feared from the water-tube boilers.

The special correspondent of the *Naval and Military Record* gave some interesting details of the coal consumption of the (B) fleet, which we append:—"It

may interest your readers to know what the total coal consumption of the (B) fleet amounted to from the hour of leaving Torbay on Monday, July 17th, to the hour of anchoring there again on Tuesday, August 8th. I therefore give it in tabular form, arranged according to the various classes of ships. It is, however, necessary to bear carefully in mind that no fair comparison can be made between these classes on the data supplied, inasmuch as they had very different tasks to perform, and performed them at very different speeds. The three modern first-class cruisers, for instance, and some of the second-class, did a great portion of their steaming at over 17 knots, whereas the battle-ships did most of their work at 10 knots or less, and the coal consumption rises enormously as the higher limit of speed is approached. The results are as follows:—

Coal Consumption of (B) Fleet from July 17th to August 8th.

	Tons. cwt.	
10 battle-ships	8,091	13
3 modern cruisers, first-class ('Europa,' 'Argonaut,' and 'St. George')	8,249	1
1 cruiser, first-class, escort to convoy ('Galatea') ...	699	0
16 cruisers, 2nd class	8,515	10
28 destroyers	5,204	2
3 torpedo gun-vessels (depôt ships)	373	9
Total	31,132	15"

FRANCE.—The following are the principal promotions and appointments which have been made: Capitaine de Vaisseau—V. M. Rossel to "Bouvines." Capitaines de Frégate—M. A. Clot to "Achéron"; P. P. M. Thibault to "Eure"; C. E. Favereau to command of Défense-Mobile in Corsica; A. M. Pichon to command of Défense-Mobile at Cherbourg; L. Despréaux de Saint Sauveur to Capitaine de Vaisseau.—*Le Journal Officiel de la République Française.*

General.—The first-class cruiser "Tage," which has been temporarily attached to the Squadron of the North for experiments with the isto-semaphore, the invention of a French naval officer for long-distance signalling, has returned to Brest, the trials having concluded. The original idea of isto-semaphoring was simply a system of sail-signalling; and its adaptation to modern ships of war is effected by means of a large rectangular frame, over which canvas is stretched, which by means of brails is made to assume different forms on the frame; the frame, when required for use, being triced up to the topmast-head. The idea is crude, as the number of combinations which can be made is extremely limited, while in a strong breeze the canvas would almost certainly be blown from the frame. The committee in the squadron appointed to carry out the experiments have reported that the signalling by the isto-semaphore offers no advantages over the existing systems, commensurate with the expense which would be incurred in fitting the installation on board ships, and that for long distances signals by balls and flags can be distinguished as easily as those of the isto-semaphore. The "Tage" has been placed in the 2nd Category of the Reserve. The crews of the first-class battle-ships "Charlemagne" and "Gaulois" have been brought up to sea strength and after their gun trials they will proceed to Toulon to join the Mediterranean Squadron, where the "Charlemagne" will take the place of the "Brennus" as flag-ship, the last-named ship being transferred to the Division of Instruction. The new torpedo-boat destroyer "Dunois" has arrived at Toulon and joined the Active Squadron of the Mediterranean Fleet. The second-class cruiser "Suchet" has left Brest for Fort de France, Martinique, where she relieves the second-class cruiser "Sfax" a vessel of an older type.

Experimental Shell-Firing.—The French Mediterranean Fleet and the division of cruisers attached to the École Supérieure de la Marine, under the command of Vice-Admiral Fournier and Rear-Admiral Bienaimé respectively, left Toulon for Salins d'Hyères and the Gulf of Juan on 8th August for various exercises and drills, ending with the annual inspection. The fleet returned to Toulon on the 31st August. During the above cruise, experimental firing with a new type of shell to test its efficacy from an incendiary point of view was practised by some of the ships, the target used being the old wooden aviso "Amiral-Parseval." The tugs "Utile" and "Dromadaire" were in attendance with a party of men to put out fires and stop leaks. The vessel had been dismantled and her side was painted to represent the armouring and turret bases of modern ships. The practice was with the 6·4-inch guns, the first shell striking on the port quarter; at the third round the ship began to take in water, but the leak was quickly repaired. Thirteen shells were fired in all, when the ship was found to be in a sinking condition, having been struck each time. Fire broke out several times, but was at once extinguished; much damage was done to the hull and engines. Vice-Admiral Fournier and the other flag-officers of the combined squadrons were present at the trials. The torpilleur-de-haute-mer "Forban" was also exercised at firing her torpedoes at the "Brennus," when steaming at a speed of 22 knots, the speed of the "Brennus" at the time being 12 knots.

The École Supérieure de la Marine.—The division of three cruisers attached to the École Supérieure de la Marine, consisting of the first-class armoured cruiser "Amiral-Charner" (flag-ship), and the second-class cruisers "Friant" and "Davout," will arrive at Brest towards the end of September for dispersal, when Rear-Admiral Bienaimé will haul down his flag. The "Friant" and "Amiral-Charner" will be placed in the 2nd Category of the Reserve at Brest, and the "Davout" in the 2nd Category of the Reserve at Rochefort from the date of 1st October. On the same date the ships of the Northern Squadron will have their complements reduced for the winter months, with the exception of the crews of the destroyers attached to the squadron, which will be maintained at their sea effective.

Steam Trials.—The new third-class cruiser "D'Estrées" has commenced her trials, but with unsatisfactory results, owing to defects in her machinery; she has been placed in the dockyard hands at Rochefort, where it is considered the necessary alterations will take two months.

The new torpedo-boat destroyer "La Hire" has commenced her trials off Cherbourg; during a 24 hours' run at 2,600-I.H.P. a mean speed of 23 knots was maintained; her four hours' full-speed trial was unsuccessful, owing to hot bearings.

The new destroyer "Hallebarde" has also been continuing her trials successfully at the same port; during a five hours' run under natural draught a mean speed of 22 knots was maintained, and during an hour's run under forced draught she attained a speed of 27·2 knots, which is a knot in excess of the stipulated contract speed.

At Toulon the new torpedo-boat No. 218 has successfully concluded her trials, having attained a speed of 25 knots, which was a knot in excess of the contract.

Dockyard Work.—The removal of some of the armour-belt from the coast-defence ship "Indomptable" and the substitution of 27·8-centimetre (10·8-inch) guns for her 42-centimetre (16·5-inch) guns is now being carried out at Toulon. The work was originally ordered to be taken in hand more than a year ago, but there have been some extraordinary delays.

At Brest the work of substituting 10·8-inch guns for the 12·6-inch guns in the "Courbet" and "Devastation," which has long been talked about, is at last to be carried through this winter. The new guns are 45 calibres long, about 41 feet and some curiosity is felt as to how they will be placed in the redoubts, as the old

guns they are replacing are some 12 feet shorter. The new guns are much more powerful, as they have an initial velocity of 2,625 foot-seconds, against 1,804 foot-seconds in the old pattern, with an initial energy of 22,750 foot-tons, as against 17,000; the weight of the projectile being 476 lbs. in the new gun against 760 lbs. in the old, while the weight of the guns is 35 and 42 tons respectively.

Photographs of Ships.—The following extract from the *Temps*, from which it would appear that photographs of ships of war are now exchanged between foreign Governments quite openly, may be new to some readers.

"At the request of the German Government, Brest dockyard has been directed to forward to Berlin photographs of the new battle-ships "Iéna" and "Suffren."

Organisation of the Squadrons for 1900.—The following is the proposed organisation of the different squadrons for the ensuing year; it is not yet known if the new Minister of Marine contemplates any alterations, but the scheme, as given, has been laid before the Chamber of Deputies:—

Mediterranean Squadron:—

First-class battle-ships—"Charlemagne," "Charles Martel," "Bouvet," "Gaulois," "Jauréguiberry," "Saint-Louis."
 Second-class cruisers—"Cassard," "D'Assas," "Du Chayla."
 Third-class cruisers—"Galilée," "Linois," "Lavoisier."
 Torpedo-boat destroyers—"Dunois," "La Hire," "Hallebarde," "Pique," "Épée," "Espingole," "Framée."
 Torpilleurs-de-haute-mer—"Coureur," "Sarrazin," "Cyclone," "Forban," "Flibustier."

The Division of Instruction and the Coast-guard Division will be each under command of a rear-admiral.

Division of Instruction:—

First-class battle-ships—"Brennus," "Carnot," "Masséna."
 Gunnery-school-ship—"Calédonien."

Coast-guard Division:—

Coast-defence battle-ships—"Tréhouart," "Bouvines," "Jemmapes," "Valmy," "Terrible."

The Squadron of the North:—

Second-class battle-ships—"Formidable," "Courbet," "Amiral-Baudin," "Redoutable," "Hoche," "Amiral-Duperré."
 First-class armoured cruisers—"Pothuau," "Dupuy de Lôme," "Bruix," "Chanzy," "Latouche-Tréville."
 First-class cruisers—"Guichen," "Châteaurenault." These two ships are the two so-called commerce destroyers, with a nominal speed of 23 knots, which neither ship has yet succeeded in attaining.
 First-class cruiser—"Surcouf."
 Torpedo-cruiser—"Fleurus."
 Torpedo-boat destroyers—"Cassini," "Durandal," "Fauconneau."
 Torpilleurs-de-haute-mer—"Aquila," "Mangini," "Sirocco."

École Supérieure de la Marine:—

First-class armoured cruiser—"Amiral-Charner."
 Second-class cruisers—"Friant," "Davout."

North Atlantic Division:—

First-class cruiser—"Cécille."
 Second-class cruiser—"Suchet."
 Third-class cruiser—"Troude."

Pacific Division:—

Second-class cruiser—"Protet."
 Third-class cruiser—"Infernet."
 Transport-avisos—"Aube."

China Division :—

First-class cruiser—"D'Entrecasteaux"

Second-class cruiser—"Jean Bart," "Descartes," "Pascal"

Third-class cruiser—"D'Estrées."

First-class gun-boats—"Zélée," "Lion," "Décidée," "Surprise."

Cochin-China Division :—

First-class despatch vessel—"Bengali."

First-class gun-boats—"Aspic," "Baïonnette," "Caronade," "Comite."

In Reserve at Saigon :—

Cuirassés de croisière—"Vauban," "Triomphant."

First-class armoured gun-boat—"Styx."

It is proposed to appoint a rear-admiral to the command of this division.

Annan and Tonkin Division :—

Cuirassé de croisière—"Bayard."

First-class despatch-vessel—"Kersaint."

Gun-boats—"Estoc," "Avalanche," "Jacquin."

The "Bayard" is to be stationed at Port Courbet, a capitaine de vaisseau will command the division and fly his broad pennant on board her.

It should be noted that all the French squadrons have been increased and that both the Mediterranean and Channel Squadrons will be stronger than they have been for a very long time ; in fact, the Channel Squadron for the first time for many years has now been made a formidable fighting unit.—*Le Temps* and *Le Yacht*.

PORTUGAL.—The protected cruiser "Don Carlos I.," built at Elswick by Sir W. G. Armstrong, Whitworth & Co., Ltd., Newcastle-on-Tyne, for the Imperial Portuguese Navy, left the Tyne on the 15th July, after having undergone both her steam and gunnery trials. The following are the principal dimensions, etc., of the vessel :—Length between perpendiculars, 360 feet ; length over all, 387 feet ; beam, extreme 47 feet 3 inches, moulded 46 feet 6 inches ; draught, forward 17 feet 6 inches, aft 17 feet 6 inches, mean 17 feet 6 inches ; displacement in tons, 4,250. The vessel is built of steel, sheathed with wood, and coppered. Provision is made for carrying about 1,000 tons of coal, but 700 tons constitutes the quantity carried on the normal displacement of 4,250 tons. The vessel has two steel masts, each of which carries two fighting tops. Three electric search-lights are fitted, and a complete installation of incandescent lamps is provided throughout the ship with the necessary engines and dynamos. The conning-tower (4 inches in thickness) is placed on the after end of the forecastle.

The machinery is of the twin-screw vertical triple-expansion type, with two low-pressure cylinders and four cranks, and was constructed by Messrs. Hawthorn, Leslie & Co. The diameters of the cylinders are :—High pressure, 30½ inches ; intermediate, 49 inches ; and the two low pressure each 56 inches, with a stroke of 27 inches. The cooling surface of condensers is 12,500 feet. The boilers are of the Yarrow type, twelve in number, with a total heating surface of 32,000 square feet, and working at a pressure of 300 lbs. to the square inch, reduced to 250 lbs. at the engines. The steam trials took place off the mouth of the Tyne, the speed being taken over the Admiralty measured mile. The first trial was for six hours with open stokeholds, run under the British Admiralty conditions on March 9th, and the mean speed obtained during six runs over the course was 20·66 knots ; the I.H.P. developed being 8,000. The forced-draught trial on March 30th resulted in the vessel obtaining, as a mean of four runs over the measured mile, a speed of 22·15 knots ; the I.H.P. developed being 12,500. During the trials the engines worked smoothly throughout.

The armament of the "Don Carlos I." consists of four 6-inch Q.F. guns, eight 4·7-inch Q.F. guns, twelve 47-millimetre (3-pounders) Q.F. guns, six

37-millimetre (1-pounder) Q.F. guns, four mitrailleuses, five torpedo-tubes. One of the 6-inch guns is mounted on the forecastle, one on the poop, and the remaining two on the upper deck. The eight 4·7-inch guns are mounted on the upper deck, the after pair firing direct astern. Two of the 3-pounder guns are mounted on the upper deck under the forecastle with direct-ahead fire, two under the poop with direct astern fire, two in each lower fighting top, and four on the bulwarks amidships. Two of the 1-pounder guns are mounted on the poop and the other four on the bulwarks. Two of the mitrailleuses are in the upper top and two on the forecastle. Three of the torpedo-tubes are submerged, one being in the lower part of the stern with direct-ahead fire and two on the broadside forward, all being fixed. The two above-water tubes are in a compartment abaft the machinery, and have large arcs of training.—*Details supplied by Sir W. Armstrong & Co.*

The two new third-class cruisers "Sao-Rafaël" and "Sao-Gabriel," constructed at Havre for this Government by the Société des Forges et Chantiers de la Méditerranée, have completed their trials successfully. They are built of steel and wood-sheathed, and their dimensions are as follows:—Length, 246 feet; beam, 35 feet 6 inches; mean draught, 14 feet 2 inches, with a displacement of 1,800 tons. The armament consists of two 15-centimetre (5·9-inch), four 12-centimetre (4·7-inch), and eight 3-pounder guns, all quick-firing, with two machine guns and one torpedo-tube. The engines develop 2,600-I.H.P. under natural, and 4,000-I.H.P. under forced draught, and there is coal stowage for 500 tons. On the official trial which took place on the measured mile off La Hève, the mean speed under natural draught for four hours was 15·7 knots, while under forced draught with an air pressure of 15 to 20 millimetres the mean speed maintained was 17·53 knots, which was an excess of ·5 of a knot over the contract.—*Le Yacht.*

RUSSIA.—The following are the principal appointments which have been made: Vice-Admirals—Alexieff to the command of the Pacific station, including Port Arthur and Vladivostok; Hildebrandt to command of Pacific Squadron. Captains—Chikhachev to the command of the 2nd Division of Seamen, retaining that of the "Nie Tron Menia"; Keesel to the coast-defence ironclad "Admiral Seniavin"; Danilevski to the battle-ship "Tri Sviatitelia"; Krabrostin to command the torpedo-boats of the 13th Fleet Division; Bubnov to the "Herzog Edinburgski"; Petrov to the first-class cruiser "Admiral Kornilov." Commanders—Mikhashevski to the gun-vessel "Gremiastchy"; Silman, junior subordinate of the Port Admiral at Vladivostok.

The first-class belted cruiser "Admiral Nakhimov" is now ready for sea and will proceed to reinforce the squadron in the Far East.

The Baltic Squadron is to be increased this year by the five fast torpedo-boats, now approaching completion, which have been built at the Creighton Works.

There will this year be tried in Eastern waters seven new torpedo-boats, which will then be attached to the Siberian flotilla. They are to be sent to Vladivostok in sections.

Notice has been definitely given that the announcement already made relative to the port of Sevastopol on and after the 1st September of this year will be rigidly adhered to, as the exigencies of the Government service require. The effect will be that all merchant-ships will be rigidly excluded from the two bays forming the harbour, the decree to that effect dating as far back as July, 1895. Much dissatisfaction is felt that no arrangements have been made for the demands of local trade.

The results of a six hours' trial of the engines of the new first-class gun-boat "Giliak," 963 tons, which are twin-screw triple-expansion, gave a mean speed of 11·25 knots, which was considered very satisfactory; but there were great variations in the pressure of steam. The starboard engine gave from 192

to 210 revolutions with a pressure of from 105 to 155 lbs., and the port from 190 to 210, with a pressure of from 122 to 135 lbs. She has six Belleville boilers with a total grate area of 4,148 square feet. It is not stated whether she attained her contract average of 1,000-H.P.

Dockyard Work.—The new first-class battle-ship "Ossliabya" is being rapidly pushed on and is nearly ready for the trial of her engines. The armour-plates protecting the casemates of her 6-inch guns are being placed in position, and her machinery is completely set up.

It is hoped that the belted cruiser "Minine" will soon be completed for sea. Her boilers are to be tested shortly. The ejectors are to be replaced by turbines, worked by electric power. Alterations are also being carried out in her internal arrangements.

The new first-class battle-ship "Kniaz Potiomkin Tavricheski," under construction at Nicolaiev, is to be launched next year, when completed she will be a formidable addition to the Black Sea Fleet.

Towards the end of the autumn the second-class cruiser "Askold," which is being built for the Russian Government at the Germania Works at Kiel, will be launched. She is to form part of the Baltic Squadron.

Five steel torpedo-launches which are now being built at the New Admiralty Works without deadwood are of the following dimensions:—Extreme length, 50 feet; beam amidships, 9 feet; draught, 4 feet; displacement, 11 tons. One is destined for the "Chesma," battle-ship of the Black Sea Squadron. The engine is in each case of 120-H.P. They are to be very carefully tested by a commission presided over by the chief engineer at St. Petersburg.

On the battle-ship "Peresviet," in addition to other works in connection with her completion, the setting up of a telemotor is in progress. This does not differ very materially from Brown's system, but is the invention of a Russian of the name of Paidasi, and as such will probably be used widely in the Service. It is applied to steering by hydraulic power. The same inventor is engaged on an apparatus for the instantaneous closing of water-tight doors.

With regard to the question of sheathing steel ships with wood for the purpose of strengthening the copper sheathing, it is pointed out:—1. That the cost is infinitesimal. 2. That the increase in weight by 5 per cent. only diminishes the speed 1 per cent. 3. That if properly done it entirely secures the steel or iron sheathing against damp or rust. 4. The longitudinal stringers greatly add to the general solidity of the hull. Grantham's method is considered preferable to that of White's.

New Ships.—The first-class armoured cruiser "Gromoboi," which was launched from the Baltic Works, St. Petersburg, on the 20th May last, in the presence of the Tsar and Tsaritsa, is a vessel of the "Rossia" class, her dimensions being as follows:—Length between perpendiculars, 473 feet; extreme length, 480 feet 6 inches; beam, 68 feet 6 inches; mean draught about 26 feet, with a displacement of 12,336 tons. The armament will consist as follows:—Four 8-inch Q.F. guns, in casemates, on the upper deck, two forward and two aft, as in the "Rossia" and "Rurik." Sixteen 6-inch Q.F. guns; ten of these are in casemates on the main deck amidships, the forward and aft casemates being directly under the 8-inch guns; all these casemates are of 6-inch Harveyized steel. On the same deck, aft of the after 8-inch, two more 6-inch Q.F. guns are carried in recessed ports. Inside the fore-castle two more 6-inch Q.F. guns are mounted behind shields; in the extreme bow is a third. The sixteenth gun will be carried on this deck right aft. Twenty 3-inch Q.F. guns, twelve-pounders; six of these will be sponsored on the upper deck above the casemates; two will be mounted on top of each forward 8-inch casemate; four will be carried upon the fore-castle forward and four aft; the remainder will be mounted under the fore-castle. Twenty-four smaller Q.F. and machine guns will be in various parts of the ship. Altogether the "Gromoboi" will carry 64 guns, and counting

only guns of 3-inch calibre or over, she will be a 40-gun ship. It will be seen that her armament differs little from that of the "Rossia," which carries four 8-inch, sixteen 6-inch Q.F. guns, twelve 3-inch Q.F. guns, and thirty-six smaller Q.F. guns. There will also be four under-water torpedo-tubes, while the auxiliary engines will be worked, as far as possible, by electricity. The "Gromoboi" will have a 6-inch Harveyized steel belt, 354 feet long, 6 feet deep, against the "Rossia's" 10-inch Harveyized. The deck behind the belt is curved as in the "Majestic," so that the protection—the slopes of the deck are 3 inches thick, or thereabouts—is altogether equivalent to 12-inch Harveyized steel, or about 24-inch iron. Nothing under a 12-inch gun, therefore, stands a chance of getting at the engines. Immediately behind the belt is a backing of about 24 inches of teak. There will be two armoured athwartships bulkheads at each end of the belt, rising to level of main deck, one forward of 9-inch steel armour, and the one aft of 8-inch; the bulkheads at each end of battery will be of 5-inch steel. The ship is to be wood-sheathed and coppered, much of this being worked into position before she was launched. The boilers are Belleville, and will probably be 36 in number. The designed H.P. natural draught, will be near 18,000. The coal capacity will be 2,500 tons, giving a radius of action of 19,000 miles at 10 knots. The continuous sea speed is to be 20 knots. There will be three screws, as in the "Rossia." The deadwood is not cut away as in the Elswick type of cruiser. The ship will have four funnels, and probably two masts. It is possible here that, as is so often the case, the original design may be departed from, and three masts fitted, but it is not very likely. The "Rossia" was given three masts because it was originally intended that she should be barque-rigged like the "Rurik"; there is not, and never has been, any intention to apply sail power to the "Gromoboi."

The new second-class cruiser "Pallada," built at the Franco-Russian Works, on Galernii Island, St. Petersburg, which was launched on the 20th ult., in presence of the Tsar, Tsaritsa, and other distinguished personages, bears a name celebrated in Russian naval history, her predecessor having conveyed Admiral Pontiatine when sent, in 1852, to try and open up Japan and China to Russian trade. His demand was access to the ports of Nagasaki and Hakodate, which was somewhat reluctantly conceded, and he also succeeded in getting charts of the eastern coast of Korea, a chart of Port Lazarev, which he had opened, and a comparative chart of the new and old survey of Korea. The "Pallada," which was built on the lines of the English frigate "President," was converted into a hulk, and lay in the Imperial Harbour at Kronstadt till 1856, when she was sunk by order of Rear-Admiral Javoika to prevent her falling into the allies' hands. The hull can still be seen when the water is clear, and recently Lieutenant Apastasiev went down in a diving-bell and brought away an iron bolt, out of which Captain Bortin, one of the six survivors of the old ship's company, has had a handsome inkstand made, and affixed to it a silver plate, with the names of the ship's company on it, which he proposes to present to the captain of the new cruiser, for the use of himself and his successors.

Her dimensions are as follows:—Length, 406 feet; beam, 55 feet; displacement, 6,630 tons, with a mean draught of 21 feet. The armament will consist of eight 45-calibre 6-inch Q.F. guns, twenty 3-inch 12-pounder Q.F. guns, and eight smaller Q.F. guns. It was originally intended to give this ship and her four sisters six 4.7-inch Q.F. guns, but the authorities seem to have decided in favour of a larger battery of 12-pounders. The engines are to develop 16,000-I.H.P., giving an estimated sea speed of 19 knots. There will be three screws, and steam will be provided by 24 Belleville water-tube boilers. There is an armoured deck 1.5 inches thick on the flat and 2.5 inches thick on the slopes, while coal bunkers are situated immediately above and below the slopes of the armoured deck. Great care has been taken to avoid the use of wood, the bed-places in the cabins even being of steel.

Orders have been given to the Creighton Works, which built the destroyers of the "Sokol" type, for two more sea-going torpedo-vessels of the type of the "Usuri" and "Sungari." The destroyer "Som," 350 tons, now being built for the Russian Government by Messrs. Laird of Birkenhead, is to be finally handed over early next summer.

Ice-breakers.—The "Ermack," according to newspaper allegations, has not satisfied the expectations entertained of her. A writer in the *Kronstädtski Viestnik*, however, declares that there is no foundation for this statement. On the contrary, she has surpassed what was expected of her. Going at low speed and propelled only by her amidships engine, she broke through 6 and 7 feet of ice at a speed of 2 miles an hour, and reached latitude 79°, to which no one has hitherto penetrated at such a season, viz., in the early part of June. She has been employed on the coasts of Spitzbergen under the immediate superintendence of Admiral Makaroff, who alone was in a position to report as to her qualities. The ease with which she did her work astonished those who witnessed it.

Yet another ice-breaker, built in Finland, has been tried for reception into the Service. She is called the "Ledokol," and is intended to keep open communication with the forts on the northern shore at Kronstadt, and is calculated to pierce ice of 8 inches thickness. Her dimensions are:—Length, 100 feet; beam, 22 feet; draught, 5 feet. Her triple-expansion engine gives a speed of 11 knots, with 150 revolutions and 90 lbs. pressure of steam.

Ice-breakers seem to be in request just now, and next year one is to be sent to Lake Baikal in sections. She is at present under construction at Messrs. Armstrong and Whitworth's.

Coal Supply.—The Government is awaking to the necessity of having special colliers for use at sea. The coal used in Eastern waters is from its very nature rapidly expended. Mechanical means for coaling more rapidly at the wharf are also wanted. The Temperley apparatus is exciting much attention and experts warmly advocate its adoption. The emulation in rapidity of coaling exhibited in the English Channel Squadron excites the admiration of Russian seamen, but they seem still to sigh for the good old days of sails and clean decks; however, since coal must be used, they are determined not to be behindhand.

Coaling stations are also exciting attention, and ports of refuge. Russia has obtained Port Arthur and Ta-lien-wan, but these are, naturally enough, insufficient. Further purchases or annexations as the outcome of Russia's "natural development" must accordingly be looked out for. Lockroy and the Jeune École are again cited as authorities. Russian officers are sadly afraid, however, that such ports may only prove traps to secure the weaker Power's ships till those of the stronger can grab them. They are bent on the cutting of cables so as to prevent warning of intended movements.

Surveys.—The "Bakan" is on her way to Spitzbergen for the purpose of surveying and ascertaining latitudes, by actual measurement, the Imperial Academy of Sciences having sent her out. Various distinguished scientists accompany the expedition, which is under the command of Captain Sergievski of the general staff. The Grand Duke Constantine (president of the academy), and other distinguished visitors were present at the service held on deck previous to her departure, and a banquet was also held to wish them good-speed. Forty Eskimo dogs are being taken out. At Helsingfors she was joined by the steamer "Nakhodka" (Discovery), and ice-breaker No. 2, and at Tromsø joined company with the "Ermack" with Admiral Makaroff on board.

The new ice-free harbour on the Murman coast, Ekaterinin, lies near the mouth of the Gulf of Kola, 10 miles from the open sea and the ordinary track of ships, and almost equidistant from the eastern and western ports at which the trade of the coast puts in. A lofty and rocky island, 1½ miles in length, shelters it from the sea, and the water is always as still as that of a lake, and a stream

which never freezes runs into it, affording a plentiful supply of fresh water, while at its mouth is a small creek suitable for a dock. A place has been found suitable for fortification, and also near the stream a plateau of sufficient dimensions for the erection of barracks for 1,000 men.

General.—A portrait of Suvarov has been sent round to all regiments and ships, the work of the court painter of the Elector of Saxony. The original bears the inscription: "Souworov d'après nature, par Schmidt, anno 1800." It is a half-length, in Austrian field-marshal's uniform, the head being a three-quarter to the right. Though this is somewhat faded in colour, it is pronounced by connoisseurs to be very life-like and expressive. It was taken at Prague in the year mentioned, and was the original of Frolov's print, and the picture by Utkin. The copies are inscribed: "Presented by the Emperor to all bodies of troops and ships."

An echo of the battle of Chesma (Tchesmé) has just been sounded. The battle, which was fought near Smyrna in 1770, resulted in the sinking of the Russian admiral's ship, amongst others, in the harbour. The Turkish Government recently signed a contract with Greek divers to examine the bottom where the action took place. They began where the Russian flag-ship sank, in from 90 to 120 feet. The divers found her a regular storehouse of treasure, bringing up 12,000 golden ducats, 20,000 quadruple ducats, a vast quantity of other gold and silver coins, many copper utensils, a golden censer, icons in gold and silver settings, silver trays, guns with the Russian Imperial Eagle, and sabres sharpened by the action of the water, as well as many skeletons. All these were sent on a special vessel to Constantinople. The divers received 270,000 francs. The search will be continued, in the Turkish ships this time.

Port Arthur is to have a Governor-General, with a council composed of a Finance Minister, a Foreign Minister, and a Minister of War.

It is noticeable that the heir-presumptive, whose sad death was recently announced, was a keen sailor, and translated Mahan's "Sea Power in the Revolution and Empire," "Sea Power in History," and Admiral Colomb's "Naval Warfare" into Russian.—*Krönstädt'ski Viestnik*.

UNITED STATES.—*Battle-ships and Monitors now Building for the Navy.*—There are now completed and in commission in the United States Navy five battle-ships, four of which are of the first and one of the second class. These are the "Oregon," "Indiana," and "Massachusetts," of 10,288 tons, and the "Iowa," of 11,410 tons, first-class battle-ships, and the second-class "Texas," of 6,315 tons.

There are now building in our yards eight first-class battle-ships of over 11,000 tons, whose aggregate displacement is 94,125 tons. As the aggregate displacement of the battle-ships now in commission is about 60,000 tons, it will be seen that we have over 50 per cent. more tonnage of battle-ships in course of construction than took part in the operations of the late war. These eight vessels represent three successive naval appropriations. The "Kentucky" and "Kearsarge" were authorised in 1895, and are about ready to undergo their steam trials; the "Alabama," "Wisconsin," and "Illinois," were authorised in 1896 and are about 60 per cent. completed; while the "Maine," "Ohio," and "Missouri" were authorised last year and are in the early stages of their construction. Judging from the rate of progress achieved in the past, we may expect to see the first-named ships in commission by the close of the present year; the three "Alabamas" by the close of 1900, and the "Maine" with her mates in the winter of 1902-3.

In addition to these fine vessels, we unfortunately have under way four ships of an obsolete and discredited type, which will be known as the "Arkansas," "Connecticut," "Florida," and "Wyoming." They are monitors, pure and simple, and represent a class of ship which was built in the early experimental stages of war-ship construction, when designers were feeling their way toward the ideal fighting-ship as represented by the eight battle-ships above mentioned. These four monitors were ordered by Congress in the face of the opinion and

advice of the men who design and the men who fight the vessels of our Navy. The fact that we are committed to the construction of four of these archaic curiosities serves to show to what absurdities Congress can be committed when it sets up its own judgment against that professional opinion which should guide it in such purely technical questions as those of war-ship design.

The particulars of the ships are given in the accompanying tables, from which it will be seen that, while there has been a reduction in the weight of the main battery, there has been a remarkable increase in the weight of the intermediate battery, the latter being so great as to render the total energy of gun-fire enormously greater in the latest ships of the "Maine" class.

Name.	Type.	Displacement in Tons.	Speed in Knots.	Armour.		Armament.	
				Belt.	Turret.	Main.	Intermediate.
Kentucky ...	First-class battle-ship.	11,525	16	13½ in.	17 in.	Four 13-in.	Fourteen 5-in. rapid-fire
Kearsarge ...	"	"	"	"	"	"	"
Alabama,	"	"	"	"	"	"	" 6-in. "
Wisconsin ...	"	"	"	"	"	"	"
Illinois	"	"	"	"	"	"	"
Maine.....	"	12,500	18	12	14 in.	12-in.	Sixteen "
Ohio.....	"	"	"	"	"	"	"
Missouri	"	"	"	"	"	"	"
Arkansas ...	Monitor.	3,100	12	11	11 in.	Two 12-in.	Four 4-in. "
Connecticut.	"	"	"	"	"	"	"
Florida	"	"	"	"	"	"	"
Wyoming ...	"	"	"	"	"	"	"

Taking the vessels in the order of their advancement towards completion, we have first the "Kentucky" and the "Kearsarge," whose dock steam trials have already taken place. Comparing them with the "Oregon" type before them and the "Alabama" type following them, they represent a transition stage. In the "Oregon" we have an unprecedented development of the armour-piercing gun and a weak intermediate battery. In the "Alabama" we see a reduction in the number of armour-piercing and a proportionate increase in the intermediate rapid-fire battery. In the "Oregon" were four 13-inch and eight 8-inch armour-piercers, while the intermediate battery consisted of only four 6-inch, and these were originally slow-firers. In the "Alabama" the 8-inch guns have been thrown out entirely, and the weight has been put into an extremely powerful battery of fourteen 6-inch rapid-firers. Now this change, which is in agreement with the course followed by other Navies, was gradual, and in the "Kentucky" and "Kearsarge" we see the intermediate step, for in these ships four of the 8-inch guns are retained, and the demand they make upon the displacement of the ship is shown by the fact that the intermediate battery consists of 5-inch instead of 6-inch guns. As the total weight of guns, mounts, ammunition, etc., for a 6-inch is about double that required for a 5-inch gun, it is evident that the retention of the four 8-inch guns necessitates the use of the lighter guns in the broadside rapid-fire battery.

The most novel feature in these ships is the double-deck turrets for the main battery. They were adopted after much discussion, in which it was argued that the 8-inch guns would not be capable of training independently of the 13-inch guns below them, and that one lucky shot might put half the main battery out of action by disabling both guns; to which it was replied that the great economy in weight and the unequalled protection afforded the 8-inch ammunition hoists, more than compensate for the risks incurred. The performance of these turrets will be watched with great interest, and we shall not be surprised if they are repeated in some modified form in future ships.

The weakest feature of the "Kearsarge" is that it sits very little higher in the water than the "Oregon"—a feature which would greatly hinder it in chasing an enemy to windward. In the "Alabama" class, ships of the same tonnage, this is rectified by the addition of a spar deck, which extends aft for three-quarters of the ship's length. This raises the freeboard to about 20 feet forward as against 13 feet aft, and enables the forward 13-inch guns to be carried at an elevation of 26 feet above the water-line. A further improvement over the "Kearsarge" is shown in the wider separation of the intermediate battery, which is rather crowded in the earlier ship and might be entirely wrecked by a single 12-inch shell. Eight of the 6-inch guns are carried on the main deck within the 5½-inch armoured citadel, four are placed behind 5½-inch armour on the spar deck above the citadel, and two are carried in 5½-inch sponsons forward on the main deck. This is a far better arrangement. The guns would take longer to silence and the danger of panic is reduced. While the total muzzle energy of the metal thrown from one broadside in five minutes works out as practically the same as that of the "Kentucky," the greater carrying power of the 6-inch over the 5-inch gun would render the fire of the "Alabama" more destructive at ordinary fighting ranges of 2,000 to 3,000 yards.

In the "Maine" class we see a greater advance than in any other ships of the new Navy. These remarkably fine vessels embody the experience gained during our late war, and in them, moreover, we have not hesitated to adopt some of the best features of foreign practice. The most important advance has been in speed and armament. The grave defect of the five ships already described is their low speed of 16 knots, which is from 3 to 4 knots less than that of some foreign battle-ships now building or in commission. It is due largely to the efforts of Commodore Melville that the "Maine" and her sisters are to steam at 18 knots instead of the 16 knots originally proposed. The result is to be obtained by giving them an increased length of 20 feet to accommodate the more powerful machinery. Another important modification that practically doubles the fighting power, as compared with the "Alabama," is the introduction of smokeless powder and improved rapid-firing ordnance. The 12-inch guns will be of great length and will show the high velocity at the muzzle of 3,000 feet per second, the same velocity being called for in the 6-inch rapid-firers. The muzzle energy of the 12-inch gun will be 48,000 foot-tons, as against 25,985 foot-tons for the 12-inch guns of the "Iowa," and 33,627 foot-tons for the 13-inch guns of the "Alabama."

	Displacement.	Main and Intermediate Batteries, Broadside.	Weight of Shell in Pounds.	Foot-Tons, Energy per Shot	Speed of Fire.	Total energy of Broadside for 5 min., in Foot-Tons.
Kearsarge	11,525 tons.	{ Four 13-inch. Four 8-inch. Seven 5-inch rapid-fire.	1,100 250 50	33,627 8,011 1,834	1 per two mins. 1 " min. 8 " "	Brown powder { 536,270 160,220 613,520 Tl. brown pwr. 1,010,010 " smokeless " 1,450,000
Alabama	11,525 tons.	{ Four 13-inch. Seven 6-inch.	1,100 100	33,627 3,200	1 per two mins. 6 " min.	Brown powder { 536,270 672,000 Tl. brown pwr. 1,008,270 " smokeless " 1,669,000
Maine	12,500 tons.	{ Four 12-inch. Eight 6-inch.	850 100	48,000 6,000	1 per min. 8 " "	Smokeless pwr. 960,000 " " 1,920,000 Tl. " " 2,880,000

The 6-inch guns will have about 6,000 foot-tons energy, as against 3,204 foot-tons for the old slow-fire 6-inch weapon. The new energies therefore represent an increase of nearly 100 per cent. over the old weapons firing brown powder.

The new guns will be provided with improved breech mechanism of the Weling pattern, the rights of which were recently purchased from Maxim-Vickers for 200,000 dollars. The rates of fire will be greatly increased thereby, so that here again will be a large addition to the fighting capacity.

In the accompanying estimate of the total energy of broadside fire in one minute the rates of fire are calculated from actual results obtained. They are, in the case of each ship, the best that could be obtained by trained crews. As a matter of fact, such a fire will never be sustained for five minutes, but the table serves the end of showing the vast increase of power and rate of fire in the case of the "Maine" due to smokeless powder and improved breech mechanism. Unless the 13, 8, 6, and 5-inch guns originally designed for the "Kearsarge" and "Alabama" classes are modified to suit the new smokeless powder, the "Maine" will be theoretically nearly 300 per cent. more powerful than the earlier ships.

Experimental work, however, is being done with the 13-inch gun, and in recent tests with smokeless powder an energy of about 44,000 foot-tons has been secured. The powder chamber has to be of less diameter and longer for the new powder, but there is no structural difficulty to prevent the change from being made.

The four monitors will have all the vices of their type. Their worst feature is that they roll so quickly as to make accurate shooting an impossibility. Admiral Sampson condemned them in his report of the San Juan engagement, and there is not a naval officer of the new school in our Navy that favours the type. The "Arkansas" and sister ships have only 18 or 20 inches freeboard, and in any kind of a sea their 12-inch guns, of which they carry two in a forward turret, would be half the time out of sight in the trough of the waves. The present designs are a modification of those first made, the ships having been lengthened 27 feet amidships to accommodate an increase supply of coal. The particulars of these ships will be found in the accompanying table.—*Scientific American*.

Tests of Armour Plates.—Entire satisfaction is expressed by officers of the Bureau of Ordnance with the ballistic tests of the 15-inch nickel steel Harveyized plate recently at the Naval Proving Station, Indian Head. This plate was attacked twice by a 10-inch gun at different velocities, and while one of the shots penetrated this was expected and caused no surprise. The results obtained were so satisfactory that the entire group of armour represented by the plate has been accepted by the Government. The report of the officers conducting the trial presents these facts: The powder charge used weighed 172 lbs., which gave the Carpenter 10-inch uncapped shell a velocity of 1,513 feet per second. At the first shot the impact was 57 inches from the bottom of the plate and 75 inches from the right edge. This projectile smashed on the plate, the head remaining welded in. The estimated penetration was 9 inches, and the diameter of the hole 11.75. There were no cracks in the plate. The powder used was brown prismatic. On the second round smokeless powder was used, the charge being 139 lbs., producing a velocity of 1,903 feet per second. The projectile was a 500-lb. Carpenter, the impact being 50 inches from the bottom and 36 from the right edge. The projectile smashed on the plate, the head remaining welded in. The penetration was 17 inches, which includes the back bulge. The diameter of the hole was 12 inches. There were three slight surface cracks extending from the right edge, but only about skin-deep. The plate attacked was what is known as the nickel steel, reformed and face-hardened variety, backed by 12 inches of oak. Navy Ordnance officers regard the test as somewhat below the usual results, but it was sufficiently good to insure the acceptance of 700 tons of armour represented by it. Next week the ballistic tests of a plate of similar thickness from a group of armour for the "Alabama" will also be tested under the same conditions.—*Army and Navy Journal*.

MILITARY NOTES.

PRINCIPAL APPOINTMENTS AND PROMOTIONS DURING AUGUST, 1899.

Brevet Colonel H. H. Mathias, C.B., A.D.C., to be Colonel to command the 75th Regimental District. Brevet Colonel W. H. Young to be Colonel to command the 16th Regimental District. Major-General Sir Archibald Hunter, K.C.B., D.S.O., to command a 1st Class District in India. Colonel E. Wood, from h.p. R.E., to be Colonel on the Staff for Royal Engineers. Brevet Colonel E. Blaksley to be Colonel on the Staff for the Royal Artillery in India. Brevet Colonel F. H. Whitby, from Lieut.-Colonel Durham L.I., to be an A.A.G. in India and to have the substantive rank of Colonel in the Army. Lieut.-Colonel J. K. Trotter, C.M.G., from Royal Artillery, to be an A.A.G. and to have the substantive rank of Colonel in the Army. The following Lieut.-Colonels to be Colonels:—A. W. C. Bell, I.S.C.; C. P. Ridley, the Manchester Regiment; J. G. Glancy, the Prince of Wales's Leinster Regiment (Royal Canadians); C. R. Conder, R.E.; E. W. Creswell, R.E.; T. R. Main, R.E.; C. W. Sherrard, R.E.; H. W. Renny-Tailyour, R.E.; T. F. Ross, the Royal Scots; F. S. Allen, h.p.; G. H. Elliott, I.S.C. Lieut.-General Sir F. W. E. F. Forestier-Walker, K.C.B., C.M.G., to be Lieut.-General on the Staff to command the troops in South Africa. Colonel C. F. Roberts, C.M.G., Military Secretary to the New South Wales Local Forces, to be Honorary A.D.C. to the Queen. Brevet Colonel W. G. Knox, C.B., R.A., to be Colonel on the Staff and to have the substantive rank of Colonel in the Army. Colonel N. R. Stewart, I.S.C., to command a 2nd Class District in India, with the temporary rank of Brigadier-General whilst so employed. Colonel G. H. C. Dyce, C.B., to be a Colonel on the Staff in India. General G. W. Walker, to be Colonel Commandant, Royal Engineers. Brevet Colonel R. B. Mainwaring, from Lieut.-Colonel the Royal Welsh Fusiliers, to be an Assistant Adjutant-General and to have the substantive rank of Colonel in the Army.

Khartoum Relic.—The photograph on the front page of the JOURNAL is that of a fragment of the diary kept by the late Lieut.-Colonel J. D. Hamill-Stewart, C.M.G., 11th Hussars, during the siege of Khartoum by the Mahdi in 1884. Lieut.-Colonel Mackie, the finder of the fragment, was attached to the River Column, commanded in the first instance by Major-General Earle, C.S.I., who was killed at the battle of Kirbekhan on the 10th February, 1885, and subsequently by Brigadier-General H. Brackenbury, now Lieut.-General Sir Henry Brackenbury, K.C.B., K.C.S.I. After many fruitless endeavours to discover the authorship, the handwriting was verified in March, 1899, as being that of Lieut.-Colonel Hamill-Stewart, by his brother, Mr. Henry Hamill-Stewart; the original fragment was thereupon presented to him by the finder.

The fragment describes the preparation of the mines, which were placed by General Gordon outside the fortifications, and reads as follows:—

"14th April, Monday.—Four steamers went up the White Nile. Arranged fuzes and shells for earth mines. We have made a wide head to the fuze and filled the tube with powder and quick fuze. On to the head we have tied a box

of matches mixed with powder and emery paper. The matches will take fire by the act of a man walking on them." (Here follow sketches of shell and mines.)

"Sent off despatches."

Lieut.-Colonel Hamill-Stewart left Khartoum on the 10th September, 1884, in the steamer "Abbas," and, after being wrecked near Hebbah, was, together with Mr. Power, *Times* correspondent, M. Herbin, French Consul, Egyptian soldiers, and Greek traders, murdered in a small hut at Hebbah, by Suliman, Sheik of Salamat. The fragment was picked up on the 21st February, 1885, in the courtyard of the hut in which the massacre took place.

The following are extracts of telegrams sent by Mr. Power to the *Times*, referring to the mines, described in Lieut.-Colonel Hamill-Stewart's diary:—

28th April, 1884 (received by the *Times* on the 29th September, 1884), dated Khartoum *via* Kassala, Massowah, and Suakim.

"General Gordon is busily engaged laying out mines in front of the works in all directions. There are now round the lines, three lines of land torpedoes; they are enormously powerful and much feared by the Arabs."

April 16th to 20th.—"Attack by the rebels on the Palace from the villages opposite. Fearful loss of life to the Arabs from mines put down by General Gordon."

May 6th.—"Heavy attack from the Arabs at the Blue Nile end of the works. Great loss of life from mines we had placed at Buri."

May 7th.—"Great attack from a village opposite, nine mines were exploded there and we afterwards heard that they killed 115 Arabs."

CANADA.—With a view to an experimental mobilisation, the fortress at Halifax was declared to be in a state of siege from 7 p.m. on June 30th, to 4 p.m. July 1st, the general idea being that a message had been received from Camperdown, reporting that an enemy's squadron was approaching the harbour.

All the forts were then immediately manned by all the available artillery, which included both divisions of the 1st Regiment Canadian Artillery, who were detailed to the following forts:—York Redoubt, Forts Clarence, Cambridge, Ives Point, and Charlotte.

The second division was composed of companies from Pictou, Mahone Bay, Digby, and Yarmouth.

The attack was represented by two torpedo-boats.

The ships having failed in the night attack withdrew; on the following morning, at seven o'clock, Camperdown reported that they were again approaching with boats in tow as if for a landing.

The forts were again manned, and the field forces, which consisted of four 9-pounder R.M.L. field guns, in charge of detachments from the 1st Division 1st Canadian Artillery, one-half battalion Leinster Regiment, one company Royal Engineers, 63rd Battalion Halifax Rifles, 66th Battalion P.L.F. and the Halifax Bearer Company, the whole under command of Lieut.-Colonel Martin, took up a position on the north-west arm, barring the approach to Halifax.

Under cover of an attack on the forts by the ships, the landing force consisting of sailors and marines from H.M. ships, about 300 strong, and two companies of the Leinster Regiment, under command of Major Seton, effected a landing at Herring Cove, and, having ascertained the position of the defending force, immediately advanced over a rough and difficult country in the direction of Halifax, with the intention of making a combined attack, the bluejackets having the right and the marines and Leinsters the left. The sailors advanced on a road in fours, and were soon caught by the fire of two field-guns occupying a position at Point Pleasant, and which commanded the whole line of the advance. These guns were well handled. Fire was opened by the attackers at about 1,200 yards, and, although the left attack was premature, it soon became general, and was replied to vigorously by the defenders, despite which the attackers passed

through the fire-swept zone with a great rush, and were within 300 yards of the position when the assault was made, the sailors swarming up on the defenders' left though subjected to a galling flank fire.

"Cease fire" sounded at 1.30 p.m., and the troops re-embarked for Point Pleasant, where the infantry formed up and marched home through the principal streets.

The field division of the 1st Canadian Artillery consisted of four guns, two of which were marched out in the morning and returned at 4 p.m., bringing with them the same amount of ammunition that they took out, having failed to locate the enemy.

General Order 62 announces that it is contemplated to create from the existing units two complete divisions of infantry, two cavalry brigades, and two independent brigades of all three arms.

The present establishment of Militia infantry in Districts 1, 2, and 3 is 11,814, which would make one division. The infantry establishment in Districts 4, 5, 6, and 7 is 11,027, which would make a second division. The whole of the infantry together in all the other districts would not make 5,500 men. The establishment of cavalry corps in Districts 1, 2, 3, 4, and 5 is 1,534, so that it will take all the cavalry in the province of Ontario and No. 5 District in Quebec to make one cavalry brigade. This leaves but 932 cavalry in the rest of Canada. To carry out what is contemplated will necessitate a very considerable increase in the cavalry, especially in the Province of Ontario, where it is excessively weak. The war establishment of an infantry battalion of eight companies is 29 officers and 981 non-commissioned officers and men, a total of 1,010 all ranks. The war establishment of an infantry company is three officers and 113 non-commissioned officers and men. It would appear desirable that the Militia establishment of infantry corps should be eight-company battalions of 65 non-commissioned officers and men per company. On mobilisation for service, any two battalions could be amalgamated, so as to make a complete battalion on its war establishment, the surplus officers and non-commissioned officers being relegated to the rear to form depôts and organise reserve battalions. Cavalry regiments should be formed of three squadrons each for a like purpose, and the three independent squadrons at Ottawa, Montreal, and Quebec should be formed into one regiment. The field artillery should all be formed into brigade divisions, in the same manner as in the 2nd Brigade Division. The departmental corps, which are at present non-existent, require to be organised.

General Order 62, Regulations for the Canadian Militia Army Medical Services, is the most far-reaching order that has been promulgated from headquarters for some years. It is the first authoritative intimation that it is contemplated to form two complete infantry divisions, two cavalry brigades, and two independent brigades of all three arms from the existing military units. The medical service is to be re-organised with a view to providing the necessary medical service for:—*a.* The defence of certain given strategical centres. *b.* Offensive-defensive operations in the field by a fully-equipped field force.

For service under *a* five bearer companies will be formed. For service under *b* four bearer companies and six field hospitals will be formed for the two infantry divisions; two bearer companies and one field hospital for the two cavalry brigades, and one bearer company and one field hospital to each of the independent brigades of all arms. The establishment of a bearer company is 3 officers and 61 non-commissioned officers and men, with four forage carts, one water cart, and ten ambulance wagons. The establishment of a field hospital is 5 officers and 40 non-commissioned officers and men, one forage cart, one water cart, and four general service wagons. Medical equipment is to be provided for four bearer companies during the year 1899-1900, which, with the company at

Halifax already supplied by the Imperial authorities, will complete the number of bearer companies for certain strategical centres.

The Canadian Medical Service is divided into two distinct branches, as follows:—*a.* Militia Army Medical Staff Service, sub-divided into Militia Army Medical Staff and Militia Army Medical Staff Corps. *b.* Regimental Medical Service. The staff service will consist of a proportion of P.M. officers, the whole of the *personnel* of the bearer companies, field hospitals, and administrative units. The Medical Staff Corps will consist of the non-commissioned officers and men enlisted in the medical service. The regimental medical officers have been called upon to elect for staff or regimental service. The medical staff will be selected from the regimental officers who volunteer their services, and who must be under 45 years of age. The officers on the medical staff will hold combatant rank, while the regimental medical officers will retain their compound titles. A director-general with the rank of colonel is the head of the service, at \$2,800 per annum. Other officers get the *per diem* pay of their rank when employed. There will be 7 lieutenant-colonels, 17 majors, 22 captains, and 25 lieutenants in the medical staff, and promotion from rank to rank will be upon the same principle as that in a regiment. All appointments to the staff hereafter will be provisional, until qualified in the subjects laid down in General Orders. To meet the convenience of medical officers, it is understood that the Director-General is arranging for a school of instruction to be formed, under a specially qualified medical officer, who will open a school at such headquarters of districts as may be required, the course to last a week. The medical officers of permanent units at present employed will not be removed, but vacancies will not be filled, as the service will be performed by officers of the medical staff in rotation at the stations of the units. In the regimental medical service there will be but one medical officer per unit. Promotion will be rather rapid, as, after one year's service as surgeon-lieutenant, he is promoted surgeon-captain, and after four years' service in the latter rank he becomes a surgeon-major. The total service is not to exceed ten years. The uniform of the medical staff and medical corps will be that of the Royal Army Medical Corps, while regimental medical officers will wear the uniform of their corps, with the exception of head-dress and belts, which will be of departmental pattern. It is likely that many of the surgeon-lieutenants in corps will elect for the medical staff, while those medical officers who rank as surgeon-majors will probably remain regimental medical officers. The four bearer companies to be organised will be located, one each at Toronto, Ottawa, Montreal, and Quebec. There is already one at Halifax, making five, the complete establishment. The appointment of P.M.O. of districts will be restricted to officers who have qualified at Netley.—*The Canadian Military Gazette.*

FRANCE.—The Minister of War has addressed the following circular to commanders of army corps:—

In consequence of the great prevalence of a malignant aphthous fever in certain districts, the following modifications of the manœuvres of 1899 have been added to the organisation provided for by the circular of the 31st December:—

Army Manœuvres (5th and 9th Army Corps, and 1st and 5th Cavalry Divisions) will be carried out as ordered, with the exception of the cuirassier regiment at Cambrai, which will not take part in the manœuvres.

The Faucilles Manœuvres (7th Army Corps, 41st Division and 6th Cavalry Division) are abolished. Every latitude is given to the general commanding the 20th Army Corps to have either isolated manœuvres for the 41st Division in the Vosges, or to cause it to take part in the autumn manœuvres with two army corps.

Combined Cavalry Manœuvres (the 4th Division and the provisional division formed by the 1st, 2nd, and 3rd Brigades) are abolished. The 4th Cavalry

Division will execute simple brigade manœuvres and will then be at the disposal of the general commanding the 6th Army Corps for the autumn manœuvres.

The Manœuvres of the 1st, 3rd, and 8th Army Corps are completely abolished.

The 2nd Army Corps Manœuvres are abolished, except as regards the 5th Infantry Brigade (Saint Denis), which will execute isolated manœuvres for a period of from 10 to 12 days.

10th Army Corps.—The manœuvres of the 20th Division are abolished.

13th Army Corps.—The manœuvres of the 49th and 51st Brigades are abolished.

14th Army Corps.—The manœuvres of the territorial brigade, the 55th and 56th Infantry Brigades, and the 6th Cavalry Division are abolished. The corps whose autumn manœuvres have been abolished execute garrison manœuvres, under the express stipulation that the troops must always pass the night in military buildings and on no account be billeted on inhabitants.

In the event of the epidemic gaining ground in other districts during the month of August, directors of manœuvres and commanders of army corps have every latitude, after an understanding with the civil authorities, to themselves suppress any manœuvres which may be necessary, conditionally on reporting immediately to the Minister of War.—*Revue du Cercle Militaire.*

The following was the programme for the Grand Army Manœuvres to be executed this year under the chief supervision of General Giovanninelli, member of the Superior Council of War, but on account of the continued prevalence of apthous fever it is extremely doubtful if they will now be carried out.

They will last from the 7th to the 17th September inclusive, and will spread out, in a general way, in the district between Bléré, Loches, Preuilly, Plenmartin, Châtellerault, la Haye-Descartes, and Montbazou.

The following will be the *ordre de bataille* of the troops :—

The 5th Army Corps, reinforced by :—

1. Three artillery groups of two batteries, furnished by the 8th Army Corps.
2. Three companies of engineers, furnished by the 1st Engineer Regiment at Versailles.
3. The 5th Telegraph Section, mobilised in the 5th District.

The 9th Army Corps (minus the 4th Battalions of the 66th and the 125th Infantry Regiments), reinforced by :—

1. A Provisional Division, composed of the 14th Infantry Brigade (the 103rd less its 4th Battalion, and the 104th Regiment), a brigade of Marine Infantry, and a group of three Marine Artillery batteries.
2. Three artillery groups of three batteries each furnished by the 4th Army Corps.
3. Four companies of engineers, furnished by the 6th Engineer Regiment at Angers.
4. The 9th Telegraph Section, mobilised in the 9th District.

To the 5th Army Corps will be attached the 5th Cavalry Division, less the 4th Cuirassiers at Cambrai.

To the 9th Army Corps will be attached the 1st Cavalry Division.

In addition, there will be attached to the Headquarters Staff of the Manœuvres the 12th Telegraph Section, mobilised at Limoges; an aerostatic park, the *matériel* of which will be taken from the establishments at Versailles and Chalais, and the *personnel* will be furnished by the 4th Engineer Regiment at Grenoble.

The following is the manœuvre programme :—

First Period.—From the 7th to the 12th September.

7th September.—Concentration.

The 5th Army Corps in the Saint Martin-le-Beau district, with Bléré as its headquarters; the Cavalry Division at Loches.

The 9th Army Corps in the Châtellerault district, with its headquarters at Plenmartin; the Cavalry Division at La Guerche.

8th September.—Rest.

9th September.—For the army corps—Evolutions of army corps. For Cavalry Divisions—Reconnaissance and sham-fights.

10th September.—Evolutions of army corps.—In each army corps, the attack of an army corps on the march by a cavalry division.

11th September.—Evolutions of army corps.—Marching across country.

12th September.—Rest.—The army corps will occupy the following positions on this day :—

The 5th Army Corps—the Estrigueil-Ligueil line to Varennes; its cavalry division at Civray.

The 9th Army Corps—the Claise-Preuilly line to Grand-Pressigny; its cavalry division at la Haye-Descartes.

Second Period.—From 13th to 16th September.

13th September.—Manœuvres of army corps against army corps.

The 5th Army Corps.—The 5th Army Corps, as the advance guard of a Northern Army which is preparing to cross the Indre, is ordered to oppose the enemy, signalled as being on the Claise, to drive him from that river, and seize all fords, bridges, etc.

The 9th Army Corps.—The 9th Army Corps, as the right wing of a Southern Army which is preparing to cross the Vienne, is ordered to effect a collision with the enemy, signalled as being on the Ligueil-Varennes line, and to endeavour to hurl him back on Loches.

14th September.—Manœuvres of army corps against army corps.

The 5th Army Corps.—The Northern Army having to proceed to the Vienne to deny its passage to the Southern Army, the 5th Army Corps has orders to establish itself on the Varennes, Von, and Mouzay Railway and the woods to the west of Loches, especially to oppose every attempt of the enemy to interfere with the deployment of Northern Army between the Indre and the Vienne. Whilst covering its own line of retreat towards Loches, it should prevent the enemy from seizing the woods to the west of that town.

The 9th Army Corps.—The Southern Army prepares to march on the Indre to deny its passage to the Northern Army. The 9th Army Corps, established on the Ligueil-Esves-le-Montier line has orders to drive back the 5th Army Corps, to separate it from the remainder of the Northern Army and to seize the wood to the west of Loches.

15th September.—Army corps manœuvres against a skeleton enemy (5th and 9th Army Corps against the Provisional Division reinforced by a cavalry division).

The Enemy.—The Northern Army, learning that the Southern Army has crossed the Vienne, takes up a position on the Echandon line. Two army corps of this army, represented by the Provisional Division and a Cavalry Division take up a position from the wood to the west of Loches to Saint Bauld.

5th and 9th Army Corps.—The Southern Army prepare to attack them.

The 9th Army Corps on the front extending from Louroux to Manthelan.

The 5th Army Corps in *échelon* towards Bossé and Chapelle-Blanche.

16th September.—Rest.

17th September.—Presidential Review.—*Le Temps*.

The following is the general programme for the manœuvres of the 20th Army Corps for 1899 :—

I.—COMPOSITION OF THE MANŒUVRE UNITS.

11th Infantry Division (26th, 69th, 37th, and 79th Infantry Regiments). The 11th Division will march with its field batteries (six batteries of the 8th Artillery Regiment at Nancy) and its company of engineers (20th Company of the 1st Battalion at Nancy).

Units attached to the 11th Division :—

1. Two Cavalry Brigades at Lunéville, for the 7th, 8th, and 9th September. Departure from Lunéville the 7th September.
2. The 2nd Battalion of Chasseurs for the 7th, 8th, 9th, and 10th of September. Departure from Lunéville the 7th September.
3. The 17th and 20th Battalions of Chasseurs for the 6th, 7th, and 8th September. The 17th Battalion leaves Rambervillers on the 6th September, the 20th Battalion leaves Baccarat the same day.

39th Infantry Division (146th, 156th, 160th, and 143rd Infantry Regiments). The 39th Division will march with its field batteries (six batteries of the 39th Artillery Regiment at Toul) and its company of engineers (20th Company of the 2nd Battalion at Toul). Departure from Toul the 6th September.

Units attached to the 39th Division :—

1. The 20th Cavalry Brigade and 12th Dragoons, for the 6th, 7th, 8th, and 9th September. Leave Pont-à-Mousson on the 6th September. The 5th Hussars for the 7th, 8th, and 9th September. Leave Nancy to go into cantonments some kilometres from Nancy. This regiment will only become entitled to allowances from the 7th September.
2. The 1st Battalion of Chasseurs for the 6th, 7th, 8th, 9th, and 10th September. Leave Troyes on the 29th August.
3. The 4th Battalion of Chasseurs from the 7th, 8th, 9th, and 10th September. Leave Saint Nicolas on the 7th September.
4. The 17th and 20th Battalions of Chasseurs for the 9th and 10th September. The Corps Artillery of the 20th Army Corps for the 11th, 12th, 13th, 14th September. The 7th, 8th, and 9th batteries of the 30th Artillery Regiment. Leave Toul on the 10th September.

20th Cavalry Brigade will be attached to the 39th Division from the 6th to the 9th September, and will be under the immediate orders of the general commanding the 20th Army Corps from the 9th September to the termination of the manœuvres.

The 12th Dragoons will leave Pont-à-Mousson at 6 a.m.

The 5th Hussars will leave Nancy at 6 p.m. to take cantonments at some kilometres from Nancy. The general commanding the 39th Division will decide upon the cantonments for the 6th September.

The 4th Chasseurs at Epinal will leave on the 8th September. The 5th Chasseurs at Neufchâteau will leave the 9th September. The 4th and 5th Chasseurs will proceed direct to the district of Thiancourt, where the 2nd Cavalry Division will be completely constituted by the evening of the 10th September to form a light column with the Brigade of Chasseurs à pied. The marches of the 4th and 5th Chasseurs will be regulated by the general commanding the 2nd Cavalry Division who will give them a special scheme for the employment of the 9th and 10th September. The area of the cantonments for the 10th and 11th September will be notified later.

Brigade of Chasseurs à pied.—The 1st, 2nd, 4th, 17th, and 20th Battalions of Chasseurs will be formed into a brigade of two groups on the 11th September.

This brigade joined to the 2nd Cavalry Division from the 11th September, will form, with this division, a light column attached to the 20th Army Corps. The Heavy Artillery, group of 155 court, will be served by units drawn from the

39th Artillery Regiment, and the 6th Battalion of Foot Artillery leave Toul on the 10th September, and will be attached to the 20th Army Corps for the 10th, 11th, 12th, 13th, 14th, and 15th September.

Measures regarding this group will form the subject of special instruction, which will be communicated later.

41st Division.—The 7th Army Corps, the 41st Infantry Division at Remiremont, and the 2nd Independent Cavalry Division at Lunéville, which should originally have taken part in the army corps manœuvres under General Négrier, will execute, this year, divisional manœuvres.

II.—MANŒUVRES AREAS.

1. From the 6th to the 10th September.

Divisional Manœuvres.—The district included between the Bayon-Avricourt Railway, to the frontier, from Avricourt to Pagny-sur-Moselle, the Moselle from Bayon to Toul, the road from Toul to Thiancourt, and the Rupt de Mad, from Thiancourt to Pagny-sur-Moselle.

2. From the 11th to 15th September.

Manœuvres under the direction of General Hervé.—The district included between the Meuse on the west, and the Moselle on the east, and the Pari-Avricourt Railway to the south.—*Le Progrès Militaire.*

GERMANY.—The following are the recruiting statistics for the year 1898 in the German Army :—

The number of young men who reached the age for military service amounted to 720,460. By adding those who were postponed in 1896 (481,400) and in 1895 (336,734) and those of previous classes (85,791), a result of 1,624,385 men is obtained as the gross total of the recruiting resources.

The classification has been made as follows :—

Unfit for service	...	...	...	...	...	40,431
Debarred from service	..	...	...	...	...	1,210
Recruits failing to appear	..	...	...	...	...	158,851
Postponed	...	...	...	...	...	571,550
Enrolled in the Land Forces	{ Combatant (a) ...					214,616
	{ Non-combatant (b) ...					4,512
Enrolled in the Navy	...	...	...	...	...	5,710
Liable to 1st Levy of Landsturm	...	...	...	...	...	108,167
Surplus of young men who are fit	...	...	...	...	...	5,673
Enlisted voluntarily in Army (c)	..	...	...	...	...	21,194
Do. do. Navy	...	...	...	...	...	781
Emigrants compelled to serve abroad	...	...	...	...	...	407,203
Assigned to the Recruiting Reserve	{ Of the Army ...					83,534
	{ Of the Navy ...					953

Total 1,624,385

The number of young men who enlisted in the Army before attaining the age for military service reached 21,284. By adding this total to those mentioned under the headings *a*, *b*, and *c*, one arrives at a total contingent of 261,606 men embodied during the year 1898.

From an educational point of view, only 200 of those called out could neither read nor write.—*Bulletin de la Presse et de la Bibliographie Militaires.*

The following are the details of the Grand Manœuvres which will be executed by the German Army in the Grand Duchy of Baden and in Wurtemberg :—

As a preliminary the XV. Army Corps will manœuvre in Alsace under the following conditions:—

1. *Regimental Manœuvres* at Steinbourg, Bühl, Bitche, Hagenau, and Mutzig, with this particularity that all will manœuvre on ground with which they are not familiar.

2. *Brigade Manœuvres* from the 17th to 23rd August, viz:—The 59th Brigade at Steinbourg, the 60th at Bühl, the 61st at Hagenau, the 62nd at Mutzig, and the 85th at Steinbourg.

3. *Detachment Manœuvres* from the 25th to 28th August, viz:—59th Brigade at Hochfelden, the 60th at Phalsbourg and Saverne, the 61st at Strasburg, and the 62nd at Mutzig. The regiments composing the 85th Brigade will be attached as follows:—The 105th to the 60th Brigade, the 171st and 172nd to the 59th Brigade.

4. *Divisional Manœuvres*, the 29th, 30th, and 31st August, viz:—The 30th Division between Saverne and Willgottheim, the 31st Division in the neighbourhood of Strasburg.

5. *Army Corps Manœuvres*, the 1st September, at Wasselonne; the 2nd September, all the troops composing the army corps will proceed to Strasburg, where they will be reviewed by the Emperor on the 4th September; the 5th September, the whole army corps will proceed by stages to the Grand Duchy of Baden and to Wurtemberg, where it will manœuvre under the supervision of the Emperor, against the XIII. and XIV. Army Corps. The effectives of the three army corps are as follows:—

XIII. Army Corps ...	26 battalions	10 squadrons	23 batteries (132 guns)
XIV. " " ...	33 " "	10 " "	23 " (132 ")
XV. " " ...	36 " "	10 " "	20 " (120 ")
2 Cavalry Divisions ...		60 " "	4 " (24 ")
Total ...	95 battalions	90 squadrons	70 batteries (408 guns)

In the 95 battalions are included 4 pioneer battalions.

The *Grand Manœuvres* of the XVI. Army Corps will commence on the 14th August, and end on the 28th September.

1. *Regimental Manœuvres* to the 26th August.

2. *Brigade Manœuvres* from 28th August to 2nd September, with garrison artillery at the siege operations which will take place at Thionville, and will subsequently manœuvre round Metz. The 66th Brigade will manœuvre in the neighbourhood of this latter town; the 67th Brigade will also manœuvre near Metz. Two battalions of the 131st will take part in the operations at Thionville, and on the 4th September the 67th Brigade will garrison Strasburg during the remainder of the Imperial Manœuvres. The 68th Brigade will manœuvre at Thionville from the 28th August to the 2nd September, the 86th Brigade at Saint Avold.

3. *Detachment Manœuvres*.—The 65th Brigade from the 15th to 18th August between Maizeroy and Dienze, the 68th at Metz.

4. *Divisional Manœuvres*.—The 33rd Division from the 19th to 23rd September between Saarlbe-Faulquemont and Forbach. The 34th Division, same dates, at Morhange. The 33rd Cavalry Brigade, which will go through the Imperial Manœuvres with the XIV. Army Corps, will take part in the review at Strasburg on the 4th September.

5. *Army Corps Manœuvres* from the 26th to 28th September in the neighbourhood of Saarlbe and Faulquemont.—*La France Militaire*.

The German Government bought some little time ago a fairly large piece of ground, in order to enlarge the camp of instruction at Lockstedt. As there were a certain number of buildings, as well as a village called Ridders, which had to be

destroyed, situated on this piece of ground, the military authorities seized on this as a good opportunity for testing the efficacy of the new artillery *matériel* with regard to buildings. Consequently the 9th and 24th Artillery Regiments, encamped at Lockstedt, were ordered to destroy the village of Ridders by artillery fire.

A German correspondent of the *Allgemeine Schweizerische Militär-Zeitung* reports as follows on the operation:—"A fire, which proved the excellent qualities of our new field gun, was opened on this objective. At the fifth shot several houses were observed to be already burning, and when quick-firing commenced the whole village became a mass of flames in a few minutes."

The *Allgemeine Militär-Zeitung* gives the following details about the new field howitzer:—Up to the present time shells have been used when firing on an enemy placed behind shelter; but have never given satisfactory results. The artillerists have succeeded in constructing a piece of ordnance which fulfils all modern requirements, and is as efficacious as it is exact. Trials with the new field howitzer are being constantly carried out at the Artillery School at Jüterbog.

A new fuse has, besides, been invented. When the projectile is meant to be used against the interior of shelters, building, or entrenchments, it passes through them without bursting, causing the greatest destruction even inside the covers where the enemy are placed. One knows up to the present, the projectile, on the contrary, generally bursts on impact with the exterior of the shelter, and consequently produces far less deadly results.

The *Allgemeine Militär-Zeitung* adds that the German field artillery has made a great advance on foreign artillery, and that at the present time it holds the first place in Europe.

A cavalry officer having recently constructed a lance that can be taken to pieces, the *Militär-Wochenblatt* gives the advantages of this invention. One may admit with certainty, says the author of this article, that cavalry will frequently be obliged, when going rapidly in advance to seize important points, such as defiles, bridges, etc., to fight on foot. They must, therefore, not only appear suddenly and dismount in order to take advantage of a favourable moment to cause the greatest damage to the enemy, but must also, eventually, disappear as rapidly. But as the moment of dismounting or of mounting is a particularly critical one (as small detachments of the enemy's cavalry, even though weak, may easily, if they surprise, cut up and disperse dismounted cavalry parties of double or three times their strength), it is impossible for cavalry soldiers, armed with the lance, to dismount or mount quickly enough. If one pictures to oneself a cavalry detachment rushing to their horses, and thrown into disorder by being fired upon, it is doubtful if every man, in his hurry, would have time to take hold of his lance when mounting his horse.

A lance that can be taken to pieces, placed in a case on the left of the saddle, would be most advantageous, and would cause the inconveniences, mentioned above, to disappear. It would be further be a counterpoise to the carbine on the right of the saddle, which would be better for the horse. When the cavalry soldier descends steep declivities, and goes across broken country, the present lance is a great bother to him. On the other hand, with the lance that can be taken to pieces he can look after his mount, and can guide it with greater certainty. This lance could be taken from its case by word of command or by signal, and put together in two seconds.

The question of the employment of carrier pigeons for the transmission of military despatches has always been a most important one in Germany; during the course of this year numerous flights have been made to various points in the Empire, especially in the fortress of Spandau. The greater number of German

towns have now a society for the keeping and training of carrier pigeons, and it is especially in Westphalia that this kind of sport is followed.

Amongst the recent flights that have taken place at Spandau, was one of 8,000 pigeons, which had been taken from Dortmund by a special train, consisting of sixteen goods wagons. It is calculated that this year, in addition to those mentioned above, more than 24,000 pigeons made their flight from Spandau to their respective dove-cots.

The societies at Hamm, Duisberg, and Gelsenkirchen obtained the most satisfactory results; the losses they sustained did not exceed the proportion of 10 per cent of the number of pigeons which took part in the flights. On the other hand, the societies at Dortmund and Boschum lost half their pigeons, which died from fatigue or from atmospheric causes.

Special facilities have been given to societies for the transport of carrier pigeons; they may send them by special trains without any excess fare, and the staff accompanying them have a right to tickets at the military rate. When they arrive at their destination the pigeons are marked in a particular way, and are kept at the cost of the military administration. The societies are however obliged, in case of need, to place their pigeons at the disposal of the Minister of War.—*Revue Militaire*.

GREECE.—The *Voïdnyî Sbornik* states, with reference to the Greek Army, that the exemptions from service are to be reduced to a minimum, and divisional and brigade staffs formed, the old districts, which was purely administrative, being abolished. Two brigades are to be mobilised every year at full strength, and exercised in camp. The general staff and transport are to be thoroughly re-organised. The military schools are to be reformed and schools of musketry and instruction set on foot. The infantry is to be re-armed with the Mauser and Männlicher rifles, and a reserve of artillery park formed. The Austrians are to be invited to lend officers for instructional purposes. Courts of honour are to be formed in all regiments, any communication on professional matters with civilians and politicians strictly forbidden, as is also the belonging to any political society, more especially the "Ethnikè Hetairia."

ITALY.—The approaching grand manœuvres, in which the Italian Army will take part, will be divided into two periods, the first period from the 28th to the 31st August, the second, from the 1st to the 8th September.

During the first period, brigade and divisional manœuvres of opposing forces will take place. In the 1st Army Corps cavalry manœuvres will take place in the valley of the Po between Turin and Carmagnola; in the 2nd Army Corps the district between Cuneo, Mondovì, and Cherasco, will be the theatre of operations.

During the second period the 1st and 2nd Army Corps will be opposed to one another between Bra, Sommariva, and Carmagnola; finally, army manœuvres will be developed in the country between the Chisola and the Saregone. On the 8th September, all the troops that have taken part in the manœuvres will be reviewed by the King at Turin.

The army corps named to take part in the manœuvres will have their ordinary effective, except the 1st Army Corps which will be reinforced by a Militia infantry division, and the 2nd Army Corps by a cavalry division. Lieut.-General Pelloux, brother of the President of the Council, will superintend the manœuvres.

Troops taking part in the manœuvres will have the regulation field kit. Each infantry soldier will carry 54 blank cartridges; each cavalryman armed with the carbine will carry 24 blank cartridges.

Foreign officers are permitted to follow the manœuvres; they will be mounted from the Cavalry School, and will be provided with a bersagliero as an orderly. A superior officer is specially charged to accompany the foreign officers, another superior officer is entrusted with the information to be given to newspaper

correspondents who are permitted to follow the manœuvres. During the grand manœuvres a company of bersaglieri cyclists will be attached to the cavalry division. The employment of these men will be made the object of special instructions by the Minister to the commanders of the units interested. In addition, the cavalry of each army corps will receive a detachment of engineer cyclists, for repairing railways, etc., and to work the telegraphic posts supposed to have been abandoned by the State *employés*.

A field bakery will be attached to the 2nd Army Corps. This bakery will consist of half a section of bakers with 12 ovens, carried on wagons. The Minister of War wishes to experiment with these portable ovens, which are of a new design. This field bakery must follow all the movements of the troops, in such a way that bread rations may be drawn direct from the bakery by the regimental carts. The director of the manœuvres will experiment on the employment of captive balloons and paper kites to accelerate the transmission of orders by signals.

The 1st Army Corps will assemble at Carmagnola, the 2nd at Cherasco.

RUSSIA.—The arrival of the Grand Duke Vladimir at the Camp at Krasnoé-Sélo, of which he will assume command, will take place during the second period of the manœuvres. There are actually present in camp 60½ battalions, 58 squadrons or sotnias, 166 guns, and 6 field mortars. Up to the 18th July the infantry executed their musketry, were instructed in guard and reconnaissance duty, and went through their regulation drills and tactical exercises.

The cavalry executed their squadron and regimental drills and were instructed in scouting, etc.

The artillery went through their gunnery practice. The second period of the stay in camp, from the 18th July to the 9th August is given up to small detachment manœuvres, by day and by night, and to field-firing.

The third period will be devoted to march manœuvres, for all the troops at the camp at Krasnoé-Sélo, in the districts of Tsarskoé-Sélo and Peterhof. The 24th Infantry Division will execute the same sort of manœuvres in the Pskof and Ostrof districts. With a view to extracting the greatest possible profit from the instruction of the troops, the Grand Duke Vladimir has ordered that during the second and third periods all the infantry units and the field artillery shall be on a war-footing. The trial of units on a war-footing at manœuvres is due to the initiative of the Grand Duke Vladimir, and is carried out, for the first time, on such a large scale. It is no longer a temporary fusion of artillery and infantry in tactical units for the carrying out of a manœuvre, or for instructional purposes decided beforehand, as was the case formerly. The new organisation will be permanent for the entire duration of the summer drills; it extends to all the troops in camp and will be adhered to during the whole of the manœuvres and field firing, which complete the instruction of the troops on the ground.

Without doubt, this procedure will give excellent practice to commanders of small or large units in reconnaissance, in supervision, and in the leading of troops in war.—*La France Militaire*.

A decision of the Superior Council of War has recently formulated the following changes in the organisation of the great military districts established in Central Asia :—The former district of Irkoutsk is joined with that of Ormsk, under the heading of "Siberian District"; the Trans-Caspian ceases to be a separate district, but is united to that of Turkestan under one military government.

These changes are something more than mere administrative arrangements; they correspond to the new situation of Russian affairs in Asia, and as such should command attention.

The existence of the Ormsk and Irkoutsk districts was justified by the immense extent of their territories, by the absence of any railway between the

two centres, and by the insufficiency of their telegraphic communication. These conditions demanded the presence on the spot of a governor-general residing at Irkoutsk, and combining with his civil function that of commanding the troops. The construction of the Trans-Siberian Railway, however, now permits of entrusting to the officer commanding the troops residing at Ormsk the inspection and administration of the troops, not very numerous, which garrison the Yenissei, Irkoutsk, and Iakoutsk Governments. Although near the Chinese frontier, these troops are in an almost completely secure position, as much by reason of the political relations of Russia with China as by the deserts which extend the whole length of the frontier in Chinese territory. Nothing, therefore, interferes with placing the whole of military Siberia under the one head, and for considering it as one vast district of the Empire, the province of Amour alone continuing to play the rôle of a military border state, on account of its vicinity to Manchuria. The constitution of the Trans-Caspian into one province, distinct from Turkestan, was decided upon in 1888 for the following reasons:—

These provinces, separated from Turkestan by the Khānats of Khiva and Bokhara, required a particular surveillance at that time. The connection of the Trans-Caspian with Turkestan was not then secured by the railway, which to-day extends beyond Samarkand to Tashkent and to Fergana.

After eleven years of the far-seeing administration of General Kouropatkin, who was Governor of the Trans-Caspian before becoming Minister of War, all necessity for anxiety, as far as regards the Turkoman population, has disappeared; nothing interferes with the partial freedom of these people from a purely military régime to which they were subjected, and to form purely administrative departments for them. On the contrary, the advantage of forming a unity of command, all along the Russian frontier in Asia, is apparent, as much on account of an always possible war, as for the simplification of the general political organisation. For these reasons the Turkestan district will in future include that of the Trans-Caspian; it is, besides, augmented by the province of Semirietchensk, which increases the extent of the whole district from 600,000 to 1,600,000 square kilometres. This new organisation bestows on the military governor the powers of ataman general of the Cossack troops at Semirietchensk; it involves also some changes in the organisation of the Syr-Daria, Fergana, and Samarkand circles. But be that as it may, this immense territory which faces, at the same time, towards China, Afghanistan, and Khorassan, makes up, with its various races and its different strategic qualities, the most magnificent command which can be offered to the talents of a general.—*Revue du Cercle Militaire*.

The Russian instructions for training in swimming and for the crossing of rivers recommends for cavalry the crossing over of horses in herds, when sufficient materials are at hand to take the men over separately to the other bank. Experience teaches that this method is far quicker (nearly twice as quick), and that it entails less fatigue on the horses, which is a matter of the greatest importance, especially in war, when more or less work lies in front of the cavalry. But with these advantages there is one defect, so that most cavalry commanders prefer that the men should cross the river with the horses. This defect is the possibility of the horses escaping after the crossing. There are a certain number of horses who either get round or break through the chain of men formed up for catching them, and it has happened that horses have had to be pursued for from 8 to 12 versts before they were caught. A further disadvantage is the possibility of the drowning of horses; in addition, too, it sometimes occurs that the horses injure themselves or one another. In war-time this danger is naturally greatly increased. Commanders of regiments have consequently hitherto rather fought shy of this method of crossing rivers. By practice, however, means have now been discovered to remove these difficulties, and to make this method of crossing possible in war-time.

The following method is one that has been followed with success for many years by a Russian dragoon regiment, viz., half or three-quarters of the men are taken over to the opposite bank to catch the horses; these men, however, do not align themselves along the bank, but in the water, and as near as possible to the spot where the horses would cease swimming. There the horses are still tired, are not able to run quickly, and are therefore easily seized by the soldiers. The driving over of the horses in a herd is performed in the following way:—The "leaders," viz., the best swimmers among the men with horses which swim well, precede the herd by 15 or 20 paces. These form a line and ride their horses. Their positions are similar to those of guides, and the swimming horses dress on them by instinct. When the horses reach their leaders in a mass they separate, but do not leave the water until each man has caught his horse. Experience has taught that by observing these rules horses will swim quietly in herds, will assemble on their leaders, and remain in the ranks with them, allow themselves to be easily caught by the men, and make no effort to break through the chain and run away. When one takes into consideration the rapidity of this method and the slight fatigue resulting to the horses, it appears, without doubt, to be most desirable that it should be thoroughly tried, as it is without danger, and constitutes the best means for a rapid crossing of rivers by large bodies of cavalry.—*Die Vedette*.

It is pretty generally known that the plan of using dogs for military purposes has been adopted by certain foreign Armies, notably the German, but it may not be known that it is proposed to use them not only as sentries, but as messengers, as carriers of cartridges to the fighting line, and as searchers for wounded men. An army unprovided with this adjunct would necessarily be at a disadvantage as against one that was so provided. The natural qualities of the dog as a sentry are obviously superior to those of the civilised man. The main fear is that he may be enticed away from his duties by the presence in the neighbourhood of females of his own species, or, if a sporting dog, by following game of some kind. This naturally raises the question as to which kind of dog is most suitable for the purpose. The ordinary watch dog is in some respects most suitable, in others, a sporting dog. The Germans are much in favour of sheep dogs and poodles, and for the purpose of carrying loads the latter is decidedly the better fitted. Various breeds might be used for various purposes. The objection to poodles is the dulness of their perceptions. For most purposes sporting dogs are undoubtedly the most suitable. One of each of these two kinds attached to a double company would suffice for all the purposes required. Sporting dogs could in time be bred so as to lose the craving for the pursuit of game, just as bloodhounds have, from disuse, lost their peculiar faculty. A cross with a watch dog or collie would probably give the desired result. The kind wanted is one that can be easily trained, not over-luxurious, able to keep in good condition on the leavings of the soldier, and in war-time live on biscuit, and so enduring as to be able to hold out for many miles. Its only luxury should be cleanliness.

The advantages of the dog as a messenger and a carrier of cartridges are obvious. He presents a very small mark, and has both greater pace and endurance than a man. It would be very difficult for a man to cross the zone of fire without being hit, whereas a dog runs scarcely any risk. Great care should however be taken to throw the weight of what he carries not on the middle of the back, but partly on the hind and still more on the forelegs. As a messenger, the dog can move more easily by night than a man is able to do, and inequalities of ground do not affect him. Whether he carries his message to the right place is merely a question of training. If smugglers can train their dogs to such perfection, there is no reason why soldiers should not be able to do the same. As regards ambulance work, the St. Bernards have shown what dogs are capable of in that respect. A very small amount of training would be required, and the dogs already trained might be largely used to train others, just as old soldiers are with recruits.—*Voiennyi Sbornik*.

SERVIA.—From the 1st January, 1899, the Servian cavalry has consisted of:—

1. A Guard Regiment of 2 squadrons.
2. A brigade of 3 regiments of 4 squadrons each.

A Royal Ukase of the 8th February, 1899, decreed the formation of a third squadron to the Guard Regiment, and no doubt a fourth squadron will shortly be formed.

In addition, the 1899 budget provides for the formation of a fourth regiment to the Army, in order to allow for the doubling of the existing brigade.

This fourth regiment has not yet been raised, but a Ukase of the 24th May, 1899, orders the disbanding of the present cavalry brigade, and the formation, with the 3 regiments that compose it and the Guards Cavalry Regiment, of a cavalry division of 2 brigades of 2 regiments each.

The 1st Brigade will consist of the 1st and 3rd Cavalry Regiments; the 2nd Brigade, of the 2nd Cavalry Regiment and of the Guards Cavalry Regiment.

These modifications were put in force on the 13th of June last.

A Royal Ukase of the 6th March, 1899, modified the organisation of the Servian infantry in the following details:—

1. Each of the 15 infantry regiments of the Army were increased to 4 battalions.
2. The 5 Guard infantry regiments were broken up.
3. The infantry battalion were numbered from 1 to 60 according to the precedence of their regiments.
4. The formation of the 3rd and 4th Battalions should take place in the course of this and next year.

Decrees, promulgated the same day, 6th March, relieved from their duties the commanders of the 5 regiments and the 10 battalions of the Guards, and nominated the commanders of the 21 newly formed battalions, 10 of which were made up from the Guards.

The Servian infantry which from 1896 to 1898 was increased from 20 to 40 battalions on a peace footing will again be increased by 20 battalions in 1899 and 1900.

The number of men, with the colours, remains the same, viz., 970 officers and 21,200 rank and file, with 4,346 horses. The battalion will therefore be on half the previous establishment. A commander-in-chief has been appointed, who will be practically independent of the Minister of War, except for financial purposes. The period of training has been reduced to from 5 to 8 months for infantry, and 15 months for cavalry and artillery, which seems most inadequate. As regards armament, 120,000 magazine rifles of a new pattern were ordered in France, but the money was not forthcoming. There are rifles of three different patterns now in use. Forty-two heavy guns for the new works at Zaichar, Piroda, and Nish, and some quick-firing guns, have been ordered in France, at a total cost of 3,000,000 francs, and are to be delivered in the course of the financial year 1898-9.—*Revue Militaire and Voïennyi Sbornik.*

TURKEY.—During the last few years, since the startling successes of the Prussian arms, it has not been unusual to see Turkish officers obtain leave to serve, for a short or long period, in the German Army, with the view of completing their military studies. The despatch of a body of officers to Germany took place for the first time in 1885. Since then every three years a body of 12 to 15 officers has left for Germany accompanied by the Sultan's Grand Equerry, von Hobe Pasha, until the latter quitted the Turkish service. The officers were posted to the three principal arms, infantry, cavalry, and artillery; in the Turkish Army their rank varied from that of lieutenant to brevet-major (Kolassi). As the greater number of these officers were not masters of the German language,

they were obliged to follow a preparatory course at Colonel von Elpon's school at Berlin. On the termination of this course the officers were presented to the Emperor and then left, according to the branch of the Service to which they were attached, for their various corps. By a Cabinet decree they receive a brevet of "lieutenant à la suite" in the Army, and are from that day not only subject to Prussian law, but are besides naturalised Prussians, and remain so during the whole of their course.

Company officers serve in their units for two complete years; on the other hand, those who are attached to the Head Quarter Staff only put in one year with it, and are then drafted into the staff of a division or army corps.

On the expiration of their stay in Germany, the Turkish officers are nominated "Oberleutenants," without any regard to their rank in Turkey. Before their departure for Constantinople they are again presented to the Emperor. They receive no pay from the Prussian Army. Their salary is regulated in advance by Turkey and amounts to from 300 to 450 marks per month, without including dress allowance. To avoid all delay in their payment, and to put the young officers beyond the reach of pecuniary embarrassment, the Turkish Government is bound to deposit in advance the entire amount of their pay for three years, at the Mendelssohn Bank at Berlin. This salary is paid to the officers the first of each month.

Last April the largest number of Turkish officers hitherto sent for a course in the Germany Army left Constantinople for Berlin. This class consists of not less than 30 officers and includes 4 of the Sultan's aides-de-camp, viz. :—Brevet Major Redjil Bey, nephew of Grand Master of Ceremonies Munir Pasha; Brevet Major Talaot Bey, son of Marshal Wehbi Pasha, Major Faik Bey, son of Marshal Arif Pasha, Governor-General of Adrianople, and Major Izzet Bey, son of Adjutant-General Achmet Tschেকে Pasha. — *Internationale Revue über die gesammten Armeen und Flotten.*

UNITED STATES.—This bird's-eye view of the strength and distribution of the United States troops was prepared for Secretary Root by Adjutant-General Corbin, and is now being considered by the former in connection with the Philippine campaign :—

Organisation.	In United States.	In Porto Rico.	In Cuba.	In Philippine Islands.	En route to Philippines.	Transport Service.	In Alaska.	In Hawaii.	On Furlough.	Totals.
Q.M. - General's Department ...	79	2	14	6	—	1	2	1	—	105
Subsistence Department ...	83	12	31	16	—	6	5	2	5	160
Ordnance Department ...	104	2	2	1	—	—	—	—	—	109
Military Academy ...	248	—	—	—	—	—	—	—	—	248
Recruiting Parties ...	500	—	—	—	—	—	—	—	—	500
Scouts ...	72	—	—	—	—	—	—	—	—	72
Signal Corps ...	148	60	65	172	32	—	—	—	—	477
Corps of Engineers ...	452	—	—	126	150	—	—	—	—	728
Cavalry ...	3,932	1,232	4,331	1,056	1,144	—	—	—	—	11,695
Artillery ...	6,283	199	1,092	2,343	—	—	—	480	—	10,397
Infantry ...	1,940	1,308	6,759	18,830	1,977	—	448	—	—	31,262
Recruits ...	2,801	—	—	—	1,769	—	—	—	—	4,570
Totals ...	16,642	2,815	12,294	22,550	5,072	7	455	483	5	60,323

Philippine Army.

Regulars, including 5,072 <i>en route</i> and 2,801 about to sail from	
San Francisco...	30,423
Organising in Philippines (two infantry and one cavalry regiments, Volunteers) ...	3,865
Organising in United States (ten infantry regiments, Volunteers)	13,090
Officers ...	1,753
Aggregate combatants for Philippines ...	48,951
Medical officers ...	219
Hospital corps ...	1,160
	1,379
Aggregate force for Philippines ...	50,330

Present Status of Army.

Regular Army, authorised strength ...	65,000
Provisional Army (thirteen regiments, Volunteers)...	16,955
Total strength of Army ...	81,955
Present enlisted strength Regular Army ...	60,323
Recruits for Regular Army still required ..	4,677
Recruits for Volunteers still required (about) ...	4,700

Volunteers to be Mustered Out.

In United States ...	4,002
<i>En route</i> to United States ...	4,906
Still in Philippines ...	6,242
Total ...	15,150

Statistics of Transportation.

Transports at Manila:—"Sheridan," "Zelandia," and "Valencia," with capacity of ...	3,070
Transports due at Manila:—"City of Para" (August 9th), "Tartar" (August 17th), and "Indiana" (August 27th) ...	3,270
Total...	6,340
Number of Volunteers in Philippines awaiting transportation to United States ...	6,180
Transportation to Philippine Islands required for:—	
Ten regiments, Volunteers ...	13,090
Recruits for three regiments, Volunteers, organising in Philippines ...	1,900
Third regiment, cavalry ...	965
Regular Army recruits, now in San Francisco ...	2,801
Marine corps ...	400
Total ...	19,156
Capacity of transportation engaged to date on Pacific ...	17,370
Under repair to sail, <i>via</i> Suez:—"Thomas" (about October, 16th), "Logan" (about October 15th) ...	3,600
Total...	20,970

—*New York Herald.*

NAVAL AND MILITARY CALENDAR.

AUGUST, 1899.

- 2nd (W.) H.M.S. "Magpie" paid off at Devonport.
4th (F.) H.M.S. "Edgar" paid off at Devonport.
7th (M.) Re-trial of Captain Dreyfus commenced at Rennes.
10th (Th.) The 22nd Company A.S.C. arrived at Natal from England on the "Gourkha."
" " H.M. the Queen reviewed the Portsmouth Volunteer Brigade at Osborne.
" " Launch of first-class armoured cruiser "Varese" from the yard of Orlando Bros., at Leghorn, for Italian Navy.
12th (Sat.) H.M.S. "Impérieuse" arrived at Portsmouth from Pacific.
17th (Th.) The 1st Lancashire Fusiliers left Aldershot and embarked on the transport "Jelunga" for Malta.
22nd (T.) The Voulet-Chanoine Mutiny reported in the French Soudan. Two French officers murdered.
23rd (W.) The 1st Manchester Regiment left Gibraltar for Durban on the "Goth."
" " Launch of second-class battle-ship "Henri IV." at Cherbourg, for French Navy.
" " Launch of torpedo-boat destroyer "Kageron," from Messrs Thornycroft's yard, Chiswick, for Japanese Government.
24th (Th.) The 1st Royal Munster Fusiliers left Fermoy and embarked on the "Arundel Castle" for Cape Town.
26th (Sat.) The 1st Lancashire Fusiliers arrived at Malta from England on the "Jelunga."
27th (S.) The 3rd Royal Fusiliers left Malta for Gibraltar on the "Jelunga."
29th (T.) H.M.S. "Seagull" commissioned at Portsmouth.
31st (Th.) H.M.S. "Impérieuse" paid off at Portsmouth.
" " The 3rd Royal Fusiliers arrived at Gibraltar from Malta on the "Jelunga."

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NOTICES OF BOOKS.

The Life of Sir George Pomeroy-Colley, K.C.S.I., C.B., C.M.G. By Lieut.-General Sir WILLIAM BUTLER, K.C.B. London: John Murray.

There are few more pathetic figures in recent history than that of Sir George Colley, and it would be a most unpleasant duty to have to speak unfavourably of the record of his life and services published some months ago by his comrade and friend Sir William Butler. Sir George Colley was, in fact, so admirable a man, brave, talented, and true as the sword he wore, that it was but the fate that placed him in a position beyond his powers, that rendered it, even apparently, necessary for his "apologia" to be written by the hand of a friend.

That there was any necessity for his biography may be doubted, and that its publication was desirable is yet more open to question. We may readily accept the truth of the picture drawn by Sir William Butler of Colley as the able staff officer, the courageous thinker and worker, the invaluable prompter and assistant, but finally the unsuccessful commander. That his want of success arose from the faults of others, and from the stress of circumstances that went

beyond the means of his command, is probably true. Yet in life he generously refused to blame others, and it is to be doubted strongly if he would have chosen to see his own fame re-established at the cost of the reputation of his subordinates. Sir William Butler's biography is, however, written in a generous spirit, and while endeavouring to place the memory of General Colley beyond the shafts of malice (shafts, it may be said, which have seldom been aimed at it), it treats with praiseworthy reticence the errors of those brave but unskilled soldiers in the last Transvaal war paid for their shortcomings with their lives.

Let us then simply remember Sir George Colley as a good soldier, who courageously and cheerfully bore a grievous burden of successive failures; who unshrinkingly saw the net close around him; who never rested from endeavours to retrieve his fortune and the fortune of his country; and who, in the end, met death like a brave English gentleman; and let us say with Sir William Butler—

"He nothing lacked
 in soldiership except good fortune."

Leaving Colley in his honoured grave, we may, perhaps, at this juncture advantageously devote a little space to his short and unfortunate campaign against the Boers, pointing out what useful lessons for the present day there may be in his experience.

It must be remembered that the Transvaal State was annexed to the Empire in April, 1877, and that, two years later, Lord Wolseley (then High Commissioner and Commander-in-Chief in Natal and the neighbouring regions) made his oft-quoted declaration that "so long as the sun shines, the Transvaal will remain British Territory." Without tracing too closely the subsequent course of events, it must suffice to say that the sun of England in South Africa became grievously obscured soon after the utterance of this remark, and that it was totally, but, we hope only temporarily extinguished on the 17th December, 1880, when the Boer flag was hoisted at Heidelberg, and the independence of the Republic proclaimed.

Sir George Colley, who had about six months previously succeeded Sir Garnet Wolseley as Governor of Natal and High Commissioner of South-Eastern Africa, including the Transvaal, was now confronted with a difficult problem. From the moment of his assumption of office he had given his attention to the dangerous dispersion of the small military force left at his disposal. At the date of the Boer rising the concentration of the two and half battalions in the Transvaal was beginning, but the first disaster of the war—for the defeat of the headquarters of the 94th Regiment at Bronkerspruit, when marching to Pretoria, cannot be called an action—effectually put a stop to it. Of the 250 men, more or less, assailed at Bronkerspruit—suddenly it is true, but after a repeated warning of the possibility of attack—120 were killed and wounded by the Boers, and the remainder taken prisoners. This success to the insurgents, coming as it did immediately after their declaration of independence, set the whole Transvaal in a blaze: British rule was in a moment at an end, and the small and scattered garrisons were one and all hotly besieged and unable to afford one another the smallest assistance or encouragement.

Not less than the anxiety for the safety of these garrisons was the dread that the spirit of revolt might spread throughout the Dutch population of South Africa, and no surprise need be felt that Sir George Colley speedily came to the conclusion that his clear duty was to make an immediate advance into the Transvaal to free his beleaguered detachments. With all promptitude Colley set out for the front, leaving Maritzburg on January 10th, 1881. His small body of available troops had preceded him on the road to Newcastle, the frontier station of Natal, and 18 days later he had made his first move and had failed.

The force with which General Colley attacked the Boer position at Laing's Nek is thus described by Sir William Butler:—

"Twelve companies of infantry, taken from four different battalions; 120 mounted troops, half of whom were infantry partly trained to ride; 6 guns, also composite, and 120 sailors: in all, a column from which about 1,200 fighting men could be envolved."

The decision to launch such a force against an enemy, fighting for freedom, flushed by success, and skilled shots holding a strong position, argues one of two things—first, that Sir George Colley was both the bravest and the most rash of commanders; or, secondly, that he made his attack because it seemed to him absolutely necessary to do so. Of these conclusions we prefer the latter, and can only mourn the fact that so courageous a determination did not meet with the success that it deserved and but narrowly missed.

Colley and his handful of troops moved out of their camp before Laing's Nek (the pass leading from Natal into the Transvaal) on the 28th January. The attacking force numbered 850 infantry and 180 mounted men, with 6 guns and 3 rocket-tubes, the remainder of the force being left to guard the camp and convoy of warlike stores.

The force moved under cover of the guns and across open grassy ridges to a point within 2,000 yards from the Boer position, the front and right of which were unassailable.

Having selected his point of attack on the left flank of the enemy, Colley promptly launched five companies of the 58th Regiment and a squadron of mounted men to the attack, holding three companies of the 60th Rifles and 70 mounted police in reserve. Then came the disaster. The cavalry came first under fire and made a most gallant but premature charge. The leading troop actually reached the Boer position, but could not hold their ground and were speedily repulsed. It was now too late to check the infantry attack, which was unsupported, except by the fire of our guns.

The attack of the five companies of the 58th was most gallant, but they were hurried over a very steep ascent by a brave but inexperienced leader, Colonel Deane, Sir George Colley's principal staff officer. The 58th, consequently, reached the crest "in a confused mass and quite beat and breathless. Deane" (wrote Sir George Colley) "made a gallant and desperate attempt to charge, and fell riddled with bullets as he got on the brow. Poole, Elwes, and Inman, his orderly officer, were all shot beside him. A number of men gallantly struggled up after him, but all the mounted officers were down . . . and there was nothing left for it but to retire. The 58th, who really fought admirably, lost 160 out of 480 men, re-formed behind the Rifles, and came back in perfect order."

The whole of Sir George Colley's letter to Lord Wolseley, from which the above extract is taken, shows his character in a charming light. There is no repining at his misfortune; no despondency; no attempt to lay the blame for his failure on his subordinates. "All I wish is," he continues, "that I could have saved those good chaps who served me so well—Deane, Poole, young Elwes, and others."

General Colley estimated the number of the Boers at Laing's Nek at 2,000, and he frankly states that they were no cowards, exposing themselves freely to artillery fire, and coming boldly down the hill to meet our men.

After the failure of this attack Colley determined to maintain his position at Mount Prospect, in preference to falling back to Newcastle and there awaiting reinforcements. There is no doubt that he formed this determination to avoid encouraging the Boers to make a general rising, and also partly in the hope that they might attack his camp and give him a chance of retrieving his misfortune.

It is needless to say that the Boers did not thus deliver themselves into Colley's hand, but that within a week of the repulse at Laing's Nek they so threatened his communications with Newcastle as to compel him to sally forth

from Mount Prospect camp to re-open the road. The fight that ensued is known as the action of the Ingogo, and but a short sketch of it can be given here.

At 8 o'clock on the morning of February 8th, Colley marched out of camp with a small force of 38 cavalry, 4 guns, and about 280 infantry of the 60th Rifles. His intention was to escort a mail past the Boer parties and to take back with him a convoy that was endeavouring to reach Mount Prospect camp.

The Ingogo River, a stream about half-way between Mount Prospect and Newcastle, was crossed without opposition, and the road beyond it led up to a plateau about a mile distant from the stream. Leaving two guns and a half-company to secure the crossing, Colley speedily pushed on to the plateau, where his small force was immediately surrounded and assailed by a heavy fire. At the very beginning of the action a small body of mounted Boers was fired at by the two guns which had crossed the river, but the Boers again showed their courage and their military instinct by moving at full gallop towards, not away from, the guns, and by rapidly opening aimed fire on the officers and gunners. The conduct of this party of Boers effectually decided the fate of the day.

It was now half-past 12 o'clock, and whatever may have been the shortcomings of our soldiers as regards marksmanship, it must be regarded as no small feat that Sir George Colley and his 300 men held that exposed plateau against the deadly fire of the Boers until dark. The losses were heavy. Both the artillery officers and most of the gun detachments had been killed or wounded; two-fifths of the entire force and three-quarters of the horses were dead or disabled; yet so bold had been their front that the Boers had refused to drive their attack home, in spite of the exhortations of their commander. After night-fall, in pitch darkness and heavy rain, the survivors of the 300 of Ingogo safely made their way over the eight miles of rough road to Mount Prospect. Sir George Colley estimated the number of the Boers at 800 to 1,000, but they were constantly reinforced throughout the day by arrivals from Laing's Nek.

The gravity of the task before Sir George Colley was now evident to him. Only a fortnight had elapsed since he had left Newcastle, and already a third of his force had been killed or wounded. The burden of his misfortunes was heavy to bear, and heavier yet the load of responsibility for the future. Unfortunate he was, rash he may be considered, yet there is much to admire and to love in the man drawn by Sir William Butler, "fixed in purpose, unshaken in resolve, bearing upon his shoulders many loads, and striving manfully for the honour of his country and the reputation of her soldiers."

The last chapter of the disastrous story must now be written, but let it be as brief as possible.

The Hill of Majuba which dominated the western extremity of the Boers' position at Laing's Nek had not been held by them. They had contented themselves by daily posting a piquet of observation on the hill, while concentrating their energies on strengthening the defences of the pass itself. They believed, in fact, that by holding the pass they could bar the road into the Transvaal, while Colley, whose force after the action of the Ingogo had been largely increased by reinforcements from India, believed that by seizing Majuba he could compel the Boers to abandon their position.

Colley was most anxious to conclude his operations against the Boers with a marked success, both to wipe out the memory of the two failures that had befallen our arms, and to strengthen the hand of the home Government in the negotiations which were in progress with the insurgent leaders. These causes sufficiently explain his determination to seize Majuba Hill by means of a night march, while the necessity of acting without alarming the Boers explains his determination to act with the troops that he had at Mount Prospect, rather than to call up reinforcements from below.

So much has been written about Majuba, that it may surprise many readers of this JOURNAL to learn that the entire force which set out for that fatal hill on the

night of February 26th, 1881, numbered but 554 men. These consisted of seven companies belonging to the 58th, 60th Rifles, and 92nd Highlanders, with 64 sailors. Three of the seven companies were posted along the line of communication between the camp and Majuba, leaving but four companies and the sailors to ascend the summit.

The march, though difficult, was overcome smoothly enough, and by 4 o'clock on the morning of February 27th the summit of Majuba was in Sir George Colley's hands. As day dawned the handful of English troops looked down on the whole of the Boer laagers about the position of Laing's Nek. No doubt of success appears to have assailed any mind among those on Majuba that Sunday morning eighteen years ago, and to this fatal over-confidence, and to the consequent failure to entrench their position, the disaster that ensued is to be attributed.

The Boer attack began with steady firing at about 7 o'clock, and for a considerable time no apprehension was felt, and it was indeed considered that the enemy was wasting his ammunition. To cut a painful story short, this apparently useless fire of the Boers simply held the attention of our men while an assaulting force, unseen and unmolested, worked its way to the position, and suddenly showing itself at a distance of about 40 yards, poured a heavy fire into our troops, which produced an instant and irretrievable panic. The general and his officers did all that men could do to restore order, but it was impossible. "In less time than it takes to tell it, the whole of the troops rushed backwards from the rocks to the brow they had ascended nine hours earlier."

Then, having tasted all the bitterness of death, the unfortunate commander was taken by the divine mercy from the scene of his disaster.

"In the sense in which death can have any pain or bitterness," writes his biographer, "George Colley died when his men broke and fled. This mountain, which seemed but an hour ago the solid base of a brilliant success, had proved to him the shifting quicksand of military misfortune."

But one word remains to be said. The disaster and humiliation of Laing's Nek and Majuba remained unavenged. The evil genius of England triumphed, and when, shortly after the death of Colley, his successor telegraphed to the home Government that "he held the Boers in the hollow of his hand," the tender conscience of Mr. Gladstone shuddered at the idea of blood-guiltiness, and the shame of Majuba became a permanent bitterness. When will the savour of it be washed away?

Practical Tactics for Beginners. By Major H. O. PERCEVAL WRIGHT, late Royal Marine Light Infantry. 8vo. Colchester: C. Knight. 1898.

The author has divided his subject into four parts, viz., Part I.—Preliminary Tactics; Part II.—Minor Tactics; Part III.—Fighting Tactics; and Part IV.—Defence and Attack of Localities and Convoys; and is to be congratulated on the attractive form with which he presents the tactics of the Drill-Book. The practical details given in the Drill-Books are difficult to grasp and follow in their present type, and the author has, by means of large headlines and special notations, made the subject far clearer to beginners. The book is really the tactics of the three Drill-Books (the actual text being followed in Parts II. and III.) placed in a clear, compact, and interesting manner before the student. Although it is as simple as possible for beginners, the book yet furnishes enough practical detail for any ordinary examination, and gives most excellent groundwork in tactical instruction.

Savigear's Guide to Horsemanship and Horse Training. Edited by Lieut.-Colonel J. GRAHAM. London: Farmer and Sons. 1899.

This little work should prove a useful hand-book, not only for soldiers and for those who take an interest in the art of equitation, but also for the general public. Mr. Savigear has had exceptional experience as an instructor, extending over a

period of nearly forty years, first in the Royal Horse Artillery, next in the 17th Lancers, and afterwards at the Royal Military College, so that any hints he can give with regard to riding and the general management of horses are bound to be of value. "A few hunting men," says the book, "affect to despise school riding altogether; but this is going to an extreme, and can only be taken as evidence of ignorance. Between the *piaffe* and *croupade* idea and that of the cross-country rider, who is ignorant of aids, a safe and sure place is claimed for the present system." The system advocated in the book ensures a strong seat, and therefore goes a long way towards securing that desirable quality "hands." The foundation of the treatise is "The Book of Aids," which is quoted verbatim, and explanations are appended to the different sections. Primarily intended as a manual for candidates for the Army, there are of course directions in the book, which will not concern the civilian, but there are many which will be found useful by hunting men; and there are also useful hints on the subject of ladies' riding and the training of horses.

Organisation and Equipment made Easy. By Captain S. T. BANNING, *p.s.c.*, 1st Bn. Royal Munster Fusiliers, Instructor in Military Administration, R.M.C. Crown 8vo. Aldershot, 1899.

This useful work has been compiled by the author with a view to presenting to officers, in a handy form, the necessary information to enable them to pass the examination for promotion in subject G, and he has succeeded admirably in his object. In nearly each case a reference for every statement in the book has been given either to an official book or to a recognised text-book, so that the reader is able to verify the facts for himself, and at the same time to become acquainted with the regulations on the subject. At the end of each chapter questions and answer are given on the subject-matter, and the appendix contains examination papers for promotion in subject G. The author shows a thorough acquaintance with his subject, and the book should prove most valuable to all officers, and of great interest to officers of Volunteers who wish to get an insight into our military system.

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